

Copyright Price



Librarian

Uttarpara Joykrishna Public Library
Govt. of West Bengal

MODERN BENGAL

A SOCIO-ECONOMIC SURVEY

[Proceedings of a seminar held at
the Institute in September, 1971]

Edited by
S. P. SEN
DIRECTOR
INSTITUTE OF HISTORICAL STUDIES

INSTITUTE OF HISTORICAL STUDIES
CALCUTTA 17
1973

First published in January 1973

Institute of Historical Studies 1973

Published by Dr. S. P. Sen
Director, Institute of Historical Studies
35 Theatre Road, Calcutta 17 (India)

Price: Rs. 12.00 (India)
U.S. \$ 3.00 or its equivalent in any other
foreign currency

Printed by Shri P. K. Ghosh
at Eastend Printers, 3 Dr Suresh Sarkar Road, Calcutta 14

P R E F A C E

The present little volume is a collection of six papers read at a Seminar held at the Institute on 12-13 September 1971, on 'Modern Bengal: A Socio-Economic Survey'. The object of the Seminar was to go into the causes, the process and the extent of the modernisation of Bengal in the second half of the 19th century. In six papers dealing with different aspects of the subject, an attempt has been made to bring out the character of modernisation in the second half of the 19th century, either distinct from or as a continuation of the trends in the first half of the 19th century.

It is no doubt true that much of the progress made in Bengal in the second half of the 19th century was based on the foundation laid in the first half of the century. This is particularly true when we consider the psychological change in the people and the pattern of social behaviour. But at the same time in matters of transport and trade, industrialisation and urbanisation there is a perceptible 'divide' between the two halves of the century. The phenomenal growth of Calcutta, the introduction of railways, the development of iron, coal, jute and other industries and the expansion of the internal market—all testify to the remarkable process of change that was going on in the second half of the 19th century. By the end of the 19th century the change was quite noticeable not only from the picture a hundred years earlier but even from that in the forties of the 19th century. From the point reached by 1900 it was an easy process to travel further and faster during the next two decades.

The importance of the study of Bengal in the 19th century lies not only in the changes that came over in the limited region of later day Bengal as a linguistic province, but also in the developments that took place in practically the whole of north India. From this point of view there was no comparison between Bengal and the other two Presidencies. So the study of Bengal

in the 19th century is almost the study of north India; and in fact, many of the changes that had come about in other parts of India had originated in Bengal. To a historian of India, therefore, Bengal in the 19th century offers a most fascinating study.

It is to be hoped that the six short papers collected in the present little volume will stimulate further interest in the subject and will lead to more detailed researches in the different aspects covered.

December 20, 1972

S. P. SEN

CONTENTS

	Page
<i>Introduction</i>	9
R. C. MAJUMDAR	
<i>Calcutta—The Primate City: A Study in Urbanisation</i>	13
CHITTABRATA PALIT	
<i>Industrialisation and Social Change</i>	27
DR. SUNIL KUMAR SEN	
<i>Impact of Railways on the Economic Life of Bengal</i>	36
DR. (MRS.) HENA MUKHERJEE	
<i>Growth of the Internal Market: A Study in Village Economy</i>	56
DR. TARASANKAR BANERJEE	
<i>The Transformation of Caste</i>	68
DR. AMITABHA MUKHERJEE	
<i>The Indigenous versus Western Medical Science: A Search for Progress</i>	85
DR. NARENDRA NATH QANUNGO	

INTRODUCTION

THIS volume is a collection of papers on the socio-economic survey of Modern Bengal read at a Seminar of the Institute of Historical Studies held in Calcutta on 12-13 September 1971. It begins with a study of the growth of the city of Calcutta, the nerve-centre of Modern Bengal. The author, Chittabrata Palit, regards it as a 'Primate City' and discusses the question of rural immigration to Calcutta with the help of statistical figures. He has collected the number of immigrants from the mofussil at different dates and classified them according to their original home, caste, profession, occupations, etc., noting the great changes caused by urbanization. He has also considered the reverse process of migration from the city to the mofussil and the outcome of the 'reciprocal pull' between the town and the country.

The next article, by Dr. Sunil Kumar Sen, supplements the first, in a way, by tracing the growth of the major industries in Bengal, with emphasis on the development of coal, iron and engineering industries. He also discusses how this helped the process of urbanization and brought about social changes.

The third paper, by Dr. Mrs. Hena Mukherjee, discusses the impact of railways on the economic life of Bengal with special reference to the growth of trade and industry and the development of coal-fields. In the next paper Dr. Tarasankar Banerjee has described how in the second half of the 19th century hindrances to the growth of 'internal market' were gradually removed by means of improvement in communication by roads and railways, standardization of weights and measures, etc., and how new urban areas were created thereby.

All these papers throw fresh light on the economic transformation in Bengal, particularly by the development of urban life and new industries, in what had been merely a rural area where the common needs of life were supplied by the village

itself and men's outlook seldom extended beyond its borders. Dr. Amitabha Mukherjee's paper breaks new ground. He has discussed the very interesting transformation that took place in the Hindu society in the 19th century by what he calls 'occupational mobility', which means that, unlike both theory and practice in old days, almost every profession was open to every description or class of persons. This led to a further development, namely, rivalry among different castes for comparative superiority in rank and status, and the claim of some castes like the Vaidyas and the Kayasthas to the status, respectively, of the Brahmanas and the Kshatriyas. Many castes other than the Brahmanas advanced claims to wear the sacred thread by quoting scriptures and amending or re-interpreting them in an ingenious manner. Government legislation, such as the Caste Disabilities Removal Act of 1850 and urbanization have profoundly affected the traditional rigidity of the old caste system which had been the steel-frame of the Hindu society for at least two thousand years.

The last article, by Dr. N. N. Qanungo, describes the introduction of Western systems of medical treatment—both Allopathic and Homoeopathic—which were slowly breaking the monopoly of the Ayurvedic system prevalent in Bengal till the 19th century. His reference to Dr. Mahendralal Sarkar, a distinguished Homoeopathic practitioner of Calcutta, is of great interest as it contains some utterances and anecdotes not generally known.

It would appear from what has been said above that this small book of about one hundred pages throws interesting light on some aspects of a very important problem, namely, the British, or rather Western Impact on Bengal and, through Bengal, on India as a whole. This subject has assumed special importance, as British domination being over, historians are in a position to take a detached view of the subject. But it must be admitted that the subject has not yet received that amount of attention either from the public men or historians which one might expect. The Seminar in which the papers collected in

this book were read and discussed may, therefore, be welcomed as a good beginning. Being present at the Seminar I still recall the attention with which the audience listened to the papers and the discussions that followed and I have no doubt they all profited by it. This publication will, I hope, evoke greater interest from a wider public and serve as a further stimulus to the study of the subject.

December 24, 1972

R. C. MAJUMDAR

CALCUTTA—THE PRIMATE CITY: A STUDY IN URBANISATION

CHITTABRATA PALIT

(*Jadavpur University*)

THE term 'Primate City', by its very nature, implies historicity. Broadly, it is a city which is an omnipotent urban centre in an otherwise rural situation. The occurrence of this one great city takes place in an early stage of a country's economic growth. The primate cities thrive in the following situations:

(a) Countries which until recent times were politically or economically dependent on other countries;

(b) Countries where the economies of scale are such as not to require cities of intermediate sizes. Besides, the existence of a primate city corresponds to the size of a country. In a small country it may remain so perpetually, but in a large country the primacy of a city is confined to a historic period. It may be supplanted or surpassed by other up-and-coming cities.

A primate city is very often the product of a colonial set-up. It is the focal point of colonial administration and trade. It provides the headquarters and organisation for collection of goods from the interior and their export as raw or finished merchandise. This leads to the setting up of agencies of exchange and extension of market facilities through which foreign elements tap the countryside. The city becomes a springboard for rural exploitation. A new kind of urban-rural relationship develops round a cash nexus. This may be the genesis of a primate city. But its primacy becomes manifest in other respects as well.

This kind of a colonial city as the seat of political power lords it over the countryside, and becomes the arbiter of rural destiny, political, social and economic. Its economic primacy

is evident from its origin as a trade mart. It also becomes the receptacle of talent and manpower as the headquarters of administration and trade. It also acts as the central pool of investment required for mercantile or industrial capitalism.¹

Calcutta, in the period under review, admirably illustrates the case. In Kipling's poetic abandon, Calcutta grew from the midday halt of Job Charnock. It remained the sole halting station for his swarming tribe till the eclipse of the Bengal Nawabs. From the time of Warren Hastings till the middle of the 19th century the colonial experiment transformed this rudiment of a trading mart into the seat of imperial government, the locus of political and economic power and the magnet of rural population. In a predominantly rural scene there was no indigenous city round a university, a church, an industry or a capital (though Dacca and Murshidabad approximated one). The John Company made Calcutta a primate city.

It became a snow-balling process during the second half of the 19th century. In the words of Dr. A. Ghosh, "Given that, due to some reason or other, certain initial clustering has taken place in an area, the biological laws of growth of human population generate a momentum in the future which helps it to retain its lead over similar clusters started later. Many other economic stimulants to growth also have similar effect. Given a certain amount of overhead facilities that has grown in an area, such facilities draw more activities in. The entry of these activities in their turn leads to the availability of more overhead facilities.... Granting that the city and the metropolitan area of Calcutta did start with some initial advantages, historical, physical or political, this feed-back process kept it advancing to a larger and larger size once a critical mass had been acquired by it."²

Now, about urbanisation. The term can mean urban living from the standpoint of either civic amenities (i.e. housing, transport, sanitation, etc.), or behaviour pattern. The first may be described as a town-planner's outlook, and the second, that of the historian-sociologist. I shall restrict myself to the second.

Here, J. Clyde Mitchell's definition is a very handy one. He defines it "as being the process of becoming urban, moving to cities, changing from agriculture to other pursuits common to cities and corresponding changing of behaviour patterns."³ In sum, it means rural migration to the urban centre and its socio-cultural consequence.

It is the purpose of the present paper to investigate this question of rural immigration to Calcutta, the primate city, and its upshot during the period under review.

The earliest reliable data on rural immigration to Calcutta can be obtained from a census of Calcutta taken in 1866 by the Justices of the Peace. This census, a mine of valuable information, has not been tapped so far by even urban sociologists and demographers. There is a tendency to rely too much on directories of doubtful validity. The reliability of the census of 1866 is vouchsafed in the Preface: "The Justices of the Peace for the town of Calcutta, having determined upon taking an account of the population of this city, a committee was appointed consisting of...the Chairman, Vice-Chairman, Dr. Norman Chevers, Manookjee Rustomjee Esq., Moulvie Abdool Luteef Khan Bahadur, Romanath Tagore...for the purpose of devising arrangements for carrying out the objects in view, in accordance with the provisions of sections 101 to 108 of Act VI of 1863."

Here, in this report, earlier estimates of Calcutta's population have been mentioned,—that of 1831 by Captain Steel, of 1837 by Captain Birch, Superintendent of Police, and of 1850 by Mr. Simms in his Report on the Survey of Calcutta.

The figures read:

1831 . . . 1,87,081
1837 . . . 2,29,714
1850 . . . 3,61,619
1866 . . . 3,77,924 ⁴

Though these figures are not absolutely reliable, they offer a good index of Calcutta's growing population. The reason, according to the report, is as follows: "The wonderful expan-

sion of the commerce of this port within the last 10 years and the large increase in the number of buildings chiefly caused by such expansion of trade clearly show that there must be a corresponding increase in the local population, though it does not follow that it consists of fixed residents altogether. Indeed, the large number of people which daily arrive and depart by the daily railway trains, principally consisting of natives, as well as the extra-ordinary number of dinghees plying for hire between the Town and Howrah, seem to indicate that by these means of conveyance at least 20,000 people daily visit the town in their ordinary occupation, and if to these be added Garden Reach; Kidderpore, Alipore, Bhowanipore, Entally, Sealdah, Cossipore, and other places of the suburbs, all of which are inhabited by people, many of whom have fixed occupations in Town, the total daily influx, or what may be called the floating population of the Town, may safely be assumed at 50,000.”⁵

The immigration can be calculated from the birth and death rates in the census. The proportion is 4.70 deaths to each new-born child, according to the Health Register which, however, is faulty due to concealment. Still, if this proportion really existed, the total extinction of the population of Calcutta would have been a question of time. The fact that the population was on the increase instead makes a good case for large-scale rural immigration to the city.

The rural migration is also attested to by the domestic servant class in Calcutta. A typical example is the census return of one Mr. Stapleton of 21 Chowringhee Road, given in the Census. The Stapletons had eight servants, and their children who had migrated to Calcutta from different parts of greater Bengal. Here is the table:⁶

<i>Name</i>	<i>Birthplace</i>	<i>Religion</i>	<i>Class</i>
1. Hyder Ali	Calcutta	Muslim	Khansama
2. Jooma Khan	Dacca	Muslim	Khidmadgar
3. Sadoo	Cuttack	Hindu	Bearer

4. Kheddo	Chittagong	Hindu	Bearer
5. Ramchurn	Chittagong	Hindu	Bearer
6. Imam Bucksh	Patna	Muslim	Coachman
7. Tatoo Khan	Midnapore	Muslim	Syce
8. Peeroo	Gyah	Muslim	Syce

The census also included a record of visitors who used to stay with their relatives in the city for temporary purpose. Their total number in the town of Calcutta in 1866 was 23,311. The total number of servants, Hindu and Muslim, was 51,075. Making allowance for the natives of Calcutta, the figure of immigration on this score should still be impressive.

Thus, in 1866, the outsiders far outnumbered the natives of Calcutta. The population was chiefly concentrated in areas between Baghbazar and College Street and up to Dalhousie Square where "by far the greatest number of Jute Screws, Dye Shops, Oil Presses and Soap Manufactories are situated."⁷

From 1866 to 1876 Calcutta, as a primate city, grew in giant strides. The population of the Town proper rose to 409,036. The Report on the Census of 1876 drawn up by H. Beverley reads, "That the growth of its trade and commerce tends to make the Town more and more a place of business merely, has been noticed in the case of the Burrabazar and Waterloo Street wards and such business areas must be constantly increasing. New shops and offices necessitate the clearing away of buildings that are less profitable as habitations and the resident population is pushed back farther and farther from the commercial centre. Similarly, improvements effected either by private enterprise or by the municipal authorities, helped to reduce the numbers of those who dwelt within the limits of the Town."⁸

Though there was no appreciable increase of population in the Town proper, the increase can be measured if the swelling of the population in the suburbs is also taken into account. Indeed, the municipal boundary of old Calcutta was giving way under the pressure of growing population which had

spilled over to the suburbs. In 1876 only 28.3% of the population were natives of Calcutta. Including the 24 Parganas, the percentage was 32.5. The rest were all immigrants. The total number of immigrants was 307,849. The districtwise distribution stated below is of absorbing interest:⁹

Hooghly-cum-Howrah	:	57,776
24 Parganas	:	17,872
Burdwan	:	33,828
Midnapore	:	20,989
Dacca	:	8,465
Chittagong	:	2,335
Mymensingh	:	1,548
Jessore	:	5,110
Noakhally	:	2,291
Nuddea	:	11,286
Patna	:	13,153
Orissa	:	19,454
N.W.P.	:	32,288

By 1881, the old Town of Calcutta was transformed beyond recognition and a new Town, including some of the erstwhile suburbs, had emerged. The transformation is recorded thus by Beverley, the Superintendent of the Census, 1881: "The boundary line which divides the municipality of Calcutta from that of the suburbs, though of historical interest, is more or less artificial. The distinctions between the privileged Town area governed by English Law and subject to the original jurisdiction of the High Court & the ordinary Mofussil world outside the Circular Road, are fast dying out. Socially and economically, there is no reason whatever, why the houses on one side of Circular Road should be considered to be a part of Calcutta, more than those on the other. In the same way, Howrah is as much a part of the Metropolis of India as Southwark is a part of London.... The warehouses and factories on the right bank of the Hooghly contribute to the trade, wealth and importance of Calcutta equally with those on the left.

They equally attract population to the Metropolitan Centre and in any statistical account which professes to deal with the population or the trade & commerce of the Metropolis as a whole, they ought not to be omitted.”¹⁰

It will, therefore, be appropriate to consider the Metropolitan population by taking into account the suburbs, if not Howrah. In 1881, the population of the Town proper stood at 400,336, that of the Town and Suburbs at 656,458, excluding the Fort William and the Presidency Jail.¹¹ It is apparent that the more or less stationary character of the population of the Town proper can be accounted for by its dispersal to the Suburbs where the population had swelled by leaps and bounds. As the report tells us, “As a rule, the tendency has been for the population to move back from the river bank and from the centre to the outskirts of Calcutta.”¹² The suburbs then comprised the greater portion of the government estate of 55 villages including Cossipore, Sinthee, Tallah, Paikpara, Ultadanga, Belgachia, Beliaghata, Kankurgachi, Narkeldanga, Entally, Tangra, Baniapukur, Kurrayah, Tollygunj, Shahanagar, Mudially, Bhowanipore, Chakrabere, Kalighat, Gopalnagar, Alipore, Chetla, Ekbalpore, Garden Reach, Kidderpore, etc., many of which are now parts of Calcutta proper.¹³ The most populated areas were Colootola, Bowbazar, Moochipara, Kumartolli, Taltolla, etc., the first having 208 persons to an acre. They were mostly commercial centres, for retail and wholesale business and export-import trade. Some of them also had jute warehouses, specially Kumartolli, Jorabagan and Burrabazar.¹⁴ The city had, in 1881, 1,067 Pucka and 342 Kutcha godowns and shops occupied by day, but not at night. There was a considerable expansion of foreign commerce and a consequent increase of immigration in the decade between 1871 and 1881.¹⁵ In 1881 the natives of Calcutta were only 26.2% of the total population, and including the 24 Parganas, it was only 38.7%. The immigrants from Bengal, outside the 24 Parganas, constituted about 47.6%, and the rest came from outside Bengal. All said, about two-

thirds of the population were outsiders. The districtwise distribution was as follows:

Burdwan	:	23,403
Dacca	:	10,046
Hooghly-cum-		
Howrah	:	56,429
Midnapore	:	19,543
Nuddea	:	11,781
24 Parganas	:	18,098
Chittagong	:	2,207
Furridpore	:	3,886
Jessore	:	5,076
Mymensingh	:	1,736
Noakhally	:	2,465
Orissa	:	17,717
Patna	:	15,137
N.W.P.	:	42,208

The total comes to 433,219.¹⁶

The cosmopolitan character of the city and its primacy in Bengal is evident from this table. The seasonal nature of such migrants is another interesting phenomenon. The rate was very high in summer, but not so during spring, autumn and the cold season which were harvesting seasons for the rural people. This especially applies to the bulk of the domestic servants in Calcutta who were vital links between the city and the countryside. They served in the city most of the year, only to return to the village during harvesting seasons. There were 41,708 men and 21,935 women as domestic servants in the city in 1881. The visitors numbered 3,222 in the city, and 2,488 in the suburbs.¹⁷

The 1881 census of Calcutta gives interesting data on occupations. According to the report there were:

- Class I: Professionals: 15,533 (male) 921 (female)
- Class II: Domestic : 41,708 (,,) 21,935 (,,)

Class III: Commercial :	70,094 (male)	2,793 (female)
Class IV: Agricultural :	14,585 (,,)	884 (,,)
Class V: Industrial :	85,226 (,,)	13,872 (,,)
Class VI: Indefinite &		
Non-productive :	208,876 (,,)	208,323 (,,)

The city as a magnet of rural population can be projected here. It is also apparent from the figures that Calcutta was primate as a commercial-industrial centre, engaging about half of 327,243 males in the city.¹⁸

A very important item is the number of hotel-keepers and boarding-house-keepers in Calcutta in 1881 which was 199, providing for the immigrants during their sojourn. They meant a new kind of life for the rural folk.

The Census of 1891 records the population of Calcutta and its suburbs at 765,510.¹⁹ Of this 30.5% were city-born and the rest were outsiders. The migration from the 24-Parganas amounted to 55,000.²⁰

Of the occupations, transport and storage absorbed 58,060 people; food and drink business 50,957; commerce 58,832; textile, etc. 28,454; learned and artistic professions 47,447; and domestic service 26,440 males, and 15,443 females.²¹

The figures clearly indicate the rate of immigration to the city between 1881 and 1891 and the walks of life attracting them.

At the end of the period under review, the census of 1901 was taken which is considered as the most scientific and hence, the most reliable. The population of the city recorded in it is 808,969 and with suburbs it goes up to 949,144. The chief concentration was in Burrabazar (52.95% of the total population). Burrabazar had become established as the business headquarters by that time. The immigrants, according to this census, numbered 495,380, or 68.1%, of which the rest of Bengal supplied 52.2%. The districtwise distribution was as follows:²²

24-Parganas :	123,000
Hooghly :	52,309

Burdwan :	15,707
Dacca :	15,346
Howrah :	14,440

The Report explains the influx in these words: "More and more men from the neighbouring villages are settling in Calcutta. This is partly due to the unhealthiness of the surrounding tracts and the benefits conferred by the much-abused Calcutta Corporation. Their places are being filled by the immigrant recruits from Bihar and N.W.P. who work in the numerous mills which have sprung up on the banks of the Hooghly."²⁸

Occupations absorbing the population, including dependents, were:

Government service	41,392
Personal service (Domestic)	157,387
Dealers in material substances	326,922
Commerce, Transport and Storage	220,906
Unskilled labour	69,691

More employments had thus been created over the last decade and there had also been an expansion of trade to support this growing population, mostly swelled by immigration.

Thus, urbanisation on a massive scale had taken place during the period under review. The whole of Greater Bengal had rotated round the primate city of Calcutta. There had been a continuous and ever-increasing rural response to the urban challenge. Naturally, the city acted as a catalytic agent for socio-cultural change. Being the brightest jewel in the British Crown, Calcutta had developed a culture which can be called heterogenetic, "creating original modes of thought that might have authority beyond or in conflict with old cultures and civilizations. Its orthogenetic (i.e. carrying forward of an old culture) culture went down before this onslaught."²⁹ The new Calcutta heterogenetic culture which was the product of the Bengal Renaissance must have sparked off, in some

form or other, myriads of rural immigrants over these crucial decades. Even as unconscious tools of history, they had carried the germs of a new awakening to the countryside. J. J. Hecht had noted how the domestic servants of England talked romantically about the city life in the countryside.²⁶ The same was true of Bengal. Not to speak of the heroes of the *Hamlet*, even domestic servants must have been infected by the urban culture.

The 1901 census gives very interesting data on the English-educated Hindu castes in the city.²⁶ The break-up reads:

<i>Caste</i>	<i>Male</i>	<i>Female</i>
Brahmans	17,132	389
Kayastha	15,835	556
Subarnobanik	3,731	84
Kaivartha	1,905	33
Vaidya	1,904	78
Tanti	1,815	43
Sadgop	1,414	31

It readily shows how the tables had been turned, how English education had spread among the lower castes and among women. It was the upshot of an urban culture under British domination.

The second interesting table is about the change of traditional occupations.²⁷ From this table, the following two castes can be picked up.

(a) Kaivartha: Total: 5,633

5.8% (Traditional occupation: Cultivation); 3.1% (Government Service); 6.6% (Zemindars' clerks); 13.6% (Private clerks); 9.3% (Merchants' clerks); 10.4% (Shop clerks); 27.6% (Merchants); 9.4% (Medical practice); 12.5% (Mukhtear); 50.00% (Mukhtears' agents); 17.5% (Bill Sircars); 2.8% (Teachers); 39.8% (Mechanics); 41% (Contractors); 34.3%

(Capitalists); 30.00% (Editors); 13.4% (Pressmen); 17.6% (Industrial labour).

(b) Brahmans: Total: 3,583

14.2% (Traditional: Worship and study); 70% (Govt. Service); 64.5% (Zemindars' clerks); 35.00% (Private clerks); 51.4% (Merchants' clerks); 11.8% (Merchants); 52.1% (Peons); 33.9% (Medical practice); 26.7% (Lawyers); 38.6% (Bill Sircars); 10.5% (Menial servants); 43.4% (Teachers); 3.5% (Mechanics); 45.4% (Surveyors); 39.3% (Naibs); 5.00% (Cooks).

The two tables show what a city could do to men belonging to traditional castes. The silent revolution can also be traced to another physical aspect. The young cadets from the country-side, accustomed to a joint-family with its hide-bound view of life, suddenly enjoyed a new lease of life in a nuclear family in the city. The patriarchal hegemony was lifted. A taste of individualism and independence intoxicated the youth. Daily contact with diverse elements resulted in a great transformation. The confirmed urbanite was poles apart from his rustic origin. He was, indeed, a twice-born. The presence of about two hundred boarding-houses and hostels, as shown by the census of 1881, clearly postulates a new kind of existence for the rural immigrants. The restrictions of caste gave way here. Inter-dining and inter-marriage became frequent.

A personal interview of old Hindoos born in the last decade of the 19th century has revealed that old values did erode as a result of urbanisation. Our literature is replete with examples of heroes coming to Calcutta from the mofussil to study law, staying at boarding-houses and indulging in forbidden food and drink. Literary evidences of inter-marriage and inter-dining are many. Reference may be made to books like *Ramtanu Lahiri O Tatkalin Banga Samaj* by Sivanath Sastri, *Sekal ar Ekal* and *Atmacharit* by Rajnarain Bose, *Kalikata Kamalalaya* by Bhabanicharan Bandyopadhyay, the auto-biography of Bepin Chandra Pal, and *Puratan Prasanga* by

Bepinbehari Gupta, for cases throughout the 19th century. Use of tap-water, European medicine and mill-made sugar also introduced flexibility.²⁸

Thus, Calcutta did send ripples to distant corners of Bengal. A new social mobility led to a new awakening. Like immigration to the city, there was also a reverse migration to the mofussil of professionals—teachers, lawyers and government servants. The outcome of this reciprocal pull between the Town and the country, modernisation of Bengal, was well under way at the turn of the 20th century.

NOTES AND REFERENCES

1. Gerald Breese, *Urbanization in Newly Developing Countries*, in Modernization of Traditional Societies Series, edited by W. E. Moore and N. J. Smelser. Prentice-Hall, India (New Delhi, 1969), pp. 38-51.
2. *The Census of India, 1961*, Monograph 2, *Calcutta—the Primate City* by A. Ghosh.
3. G. Breese, *Urbanization*, Prologue, p. 3.
4. *The Report on the Census of the Town of Calcutta by Justices of the Peace, 1866*, p. 25.
5. *Ibid.*, p.26.
6. *Ibid.*, p. 36.
7. *Ibid.*.
8. *The Report on the Census of the Town of Calcutta, 1881*, p. 19.
9. *Ibid.*, p. 41.
10. *Ibid.*, p.1.
11. *Ibid.*, p. 17.
12. *Ibid.*, p. 19.
13. *Ibid.*, p. 17.
14. *Ibid.*, pp. 18-19.
15. *Ibid.*, p. 22.
16. *Ibid.*, p. 41.
17. *Ibid.*, pp. 42-44.
18. *Ibid.*, p. 46.
19. *The Report on the Census of the Town of Calcutta, 1901*, p. 29.
20. *Ibid.*, pp. 76-79.
21. *Ibid.*, pp. 84-86.
22. *Ibid.*, pp. 76-77.
23. *Ibid.*

- 24. G. Breese, *op. cit.*, ch. II, p. 49.
- 25. J. J. Hecht, *The Domestic Servant Class in the 18th Century England*, pp. 177-78.
- 26. *The Report on the Census of the Town of Calcutta, 1901*, p. 65.
- 27. *Ibid.*, p. 122.
- 28. P. N. Bose, *A History of Hindu Civilisation During British Rule in India*, vol. II, pp. 30-33.

INDUSTRIALIZATION AND SOCIAL CHANGE

DR. SUNIL KUMAR SEN

(Rabindra Bharati University)

IT IS undeniable that there was a shift in the economic situation in Bengal in the second half of the nineteenth century. The most remarkable feature was the development of capitalist industry in some regions. In a number of industries technical developments had progressed sufficiently far to provide a basis for production of a factory type; capital running into several thousands was being invested in manufacturing industries. Joint-stock enterprise, introduced in 1857, was becoming the new form of business organization in the closing decades of the nineteenth century. It will be beyond the scope of this paper to deal with Government policy or state intervention with regard to industrial development. We shall briefly review the growth of the major industries, with emphasis on the development of coal, iron and engineering industries which were of crucial importance for the industrialization of the country. Industrialization of any country must be based on the development of metallurgical industries. A country may make considerable progress in light industries or export-oriented industries, but the real change comes when heavy industries begin to be successful.

Unlike Bombay which emerged as the capital of the Indian bourgeoisie, Bengal remained as the major investment-outlet for the surplus capital of European investors, mainly British. The industries that developed in Bengal were frequently foreign-owned and foreign-financed, and staffed by foreign technical personnel. Foreign firms repatriated their enormous profits outside Bengal so that very little capital was left that could be ploughed back into industries within the country.

Yet this does not diminish the importance of foreign capital or of the industries which owed their origin to foreign enterprise. What needs to be pointed out is that British capital was mainly invested in export-oriented or light industries and had a tendency to shy away from iron, steel and engineering industries, which entailed large capital expenditure.

It is sometimes forgotten that the first cotton mills in India were founded by the Europeans in Bengal; the Bowreah Cotton Mill was started in 1818 and the Fort Gloster mill in 1830. The cotton textile industry, however, did not make much progress in Bengal, as coal mining, jute and tea industries became the favourite objects of British capital. Coal mining commenced in Bengal in 1820, when a mine was opened at Raniganj. It made little progress until the East India Railway reached the field in 1854. The industry began to grow rapidly in the 1880's; the railways constituted the biggest single purchaser of coal. In 1897 the number of coal mines was 228 which employed about 58 thousand workers. It is noteworthy that the Bengalees owned and managed some coal mines in the Bengal coal-fields. In 1897 there were 40 mines in the Burdwan division which were owned by the Bengalees, but these enterprises consisted mostly of small pits. The jute industry owed its development to European (mostly Scottish) enterprise. In 1855 the first jute mill was founded at Rishra by George Auckland who had one Syam Sundar Sen as his partner. The possibility of large-scale manufacture opened up when the Calcutta-Raniganj railway was built and extended, and the supply of coal was assured. The jute industry had the advantage of cheap labour and proximity to the raw material. There was a diversion of paddy lands into jute cultivation, and jute became Bengal's 'golden crop' whose demand in the world markets was large and growing. In 1883-84 the number of jute mills was 21 which employed about 39,000 workers. As package material, jute was unrivalled in the world, and the jute industry depended mainly on the export market. Like jute, tea also developed as an export-oriented industry.

The first garden was opened in Cachar in 1855; the industry spread in the Tarai in the Darjeeling district in 1862 and in the Duars in 1874. The railway link between Siliguri and the Ganges was completed in 1878 and the Assam Bengal Railway, established in 1892, connected Assam with the port of Chittagong. Thus the transport system was geared to the needs of the tea industry which remained under the grip of British capital. Bengal was also the main centre of the paper industry. The Bally Paper Mills was incorporated in England in 1874; the Titaghur Paper Mills was registered in India in 1882 and the Bengal Paper Mills in 1889. The industry received Government encouragement from its inception; in fact, Government purchase over the years helped the industry to grow and develop.¹

With the coming of the 'railway age' the possibility of the development of iron, steel and engineering industries could no longer be ignored. In a remarkable passage Marx anticipated as early as 1853 the impact of railway building on India's industrial development: "I know that the English millocracy intend to endow India with railways with the exclusive view of extracting at diminished expenses the cotton and other raw materials for their manufactures. But when you have once introduced machinery into the locomotion of a country, which possesses iron and coal, you are unable to withhold it from its fabrication. The railway system will therefore become in India truly the forerunner of modern industry."² Indeed, the railways released the latent potentialities of India for industrial advance.

At this point we turn to the engineering and iron industries that developed in Bengal. The railway workshops came in the wake of the railways, and the Kanchrapara and Lilooah workshops grew to a substantial size. Burn and Jessop were old firms engaged in the engineering trade. Between 1851 and 1859 Burn laid 100 miles of track for the East India Railway. Acquin Martin and R. N. Mukherjee founded Martin and Co. in 1892. In 1897 there were seven government-approved firms

which supplied government orders, e.g. Bengal Iron and Steel Co., Barakar, Burn, Jessop, John King, Parry, Ahmety and Martin.³ The firms manufactured railway bridges, steam launches, over-bridges for railways, agricultural implements, sluice gates, trolleys, road-rollers. We know of an Indian firm, founded in 1867 by Kishorilal Mukherjee in Howrah, which manufactured small and heavy castings, railings, hand pumps, and small machine parts.⁴ The engineering industry, however, remained weakly developed, and this acted as a brake on industrialization. Locomotives, for instance, began to be manufactured in this country only after independence.

The industrial base remained weak also, because iron and steel industry did not grow to a substantial size. The indigenous iron-smelting industry was in a moribund condition and the country had become a market for the products of British iron and steel industry. During the second half of the 19th century there was only one company which attained some measure of success in the manufacture of pig iron; it was the Barakar Iron Works, founded in 1874, which was worked by the government between 1882 and 1889, and then sold to the Bengal Iron and Steel Co.⁵ This company was later merged with the Indian Iron and Steel Co. of Burnpur. The Bengal Iron and Steel Co. successfully undertook large-scale manufacture of iron. Pig iron production is the basis of the iron and steel industry, and the manufacture of steel by the Tata Iron and Steel Co. was in the offing. It is noteworthy that steel manufacture was first undertaken in the Cossipore ordnance factory which was founded in 1846 for the manufacture of small arms and cartridges. In 1896 the steel bar rolling mill was inaugurated in this factory, and production of steel started. Mahon was then the superintendent of this factory. Public memory is short. Mahon, 'the first steel expert' of India, as Curzon chose to describe him, is a forgotten name.⁶ It was Mahon's report which stimulated Jamshetji Tata's interest in steel industry.

Before we turn to examine the social changes, we should

try to comprehend the nature of industrialization that had taken place in this period. Industrialization was taking place slowly and in a lop-sided fashion. In fact, the process of industrialization had only started. Factories that remained concentrated in some regions looked like industrial islands in a vast 'agricultural sea'. Although Bengal had become the most industrialized state in India, the overwhelming mass of the Bengalees lived on agriculture. It was not fortuitous that social change was taking place very slowly, so that the pull of rural society was to remain strong in our period. To this story we now turn.

In the wake of industrial development urbanization gathered momentum. With the decay of handicrafts old towns had decayed and were replaced by new towns which were industrial centres or mining towns, or district and sub-divisional headquarters. The Census Reports from 1872 to 1901 indicate that there was a movement of population from all parts of India to Calcutta and the growing industrial centres. Surely this was a new phenomenon which was the result of industrialization and progress in the transport system. The number of towns increased from 58 in 1872 to 122 in 1901, but urban population rose from 5 to 6 per cent only in this period; and of the total urban population Calcutta claimed nearly a half.⁷ As the most industrialized state, Bengal attracted immigrants from all parts of India, notably from Bihar, Orissa and modern Uttar Pradesh. Surprisingly, there was hardly any marked tendency on the part of Bengalee artisans and peasants to move to the towns. One writer has suggested that 'gradual devitalization in health', caused by malaria, for instance, made them unfit for factory work. One may add that the Bengalee peasants' deep attachment to their village home made them reluctant to move to towns. Industrialization was, however, lagging behind urbanization, so that the up-country immigrants were not always absorbed in industries, but tried to scrape a living on miscellaneous employment. In fact, they worked as porters, carters, cooks, durwans, peons, washermen, milkmen, cobblers

and so on.⁸ The situation was worse in the residential towns which had few industries and could hardly absorb the men who had fled the village. Urbanization, therefore, had no appreciable effect on overcrowding in agriculture.

It is well known that people who work in a mine or a factory and who live in towns will have a different social outlook from people who till the fields and live in isolated villages. Urbanization, therefore, is likely to foster a modern outlook. In Bengal, in the second half of the 19th century, urbanization hardly produced this result. The middle class *bhadralok*, the product of urban environment, could not escape the influence of rural society. As Dr. Broomfield rightly notes, "the *bhadralok* had their roots deep in the soil of rural Bengal where they held the land they prized so highly."⁹ This category had not sprung from the working-class but was mainly the product and beneficiary of the Permanent Settlement. Since land was a symbol of social prestige, the middle class *bhadralok* had a tendency to purchase land and turn it over to *barga* cultivation. They would not touch the plough; tillers came from the lower castes and the Muslims. Men like Prafulla Chandra Ray, who founded the Bengal Chemicals in 1892, and R. N. Mukherjee, who studied engineering in the Presidency College and became an industrialist, were exceptions. Trevelyan has told us that adult education in England received its "first impetus from the Industrial Revolution in the desire of mechanics for general scientific knowledge"; prosperity was coming to "the engineers and mechanics from the Industrial Revolution which had called them into being."¹⁰ In Bengal the educational system was not geared to the needs of the new emerging industrial society. The great majority of the graduates of the Calcutta University from 1858 to 1881 became lawyers and clerks and teachers in Calcutta or in mofussil towns. They were not even remotely connected with the new industrial society.¹¹ It is also a fact that they were upper-caste Hindus, and "valued their caste status and their liberal institutions equally."¹² The pull of rural society was also evident among the working class

which came from the village and remained scarcely differentiated from the agricultural population. The miners and jute mill workers, for instance, maintained links with the village and retained the lingering habits of the old peasant life.

With the progress of industrialization and development of roads and railways, the process of the decay of handicrafts was quickened. The village shops were often stocked with goods from towns; foreign goods were sold in fairs in distant villages. The self-sufficing, self-clothing village had become a thing of the past. The ruined artisans and craftsmen fell back upon land which was already overcrowded. Agriculture continued to be as primitive as before; and despite industrial progress there was no application of machinery to agriculture. The educated middle class was moving to towns in search of employment, and the village remained sunk in illiteracy and ignorance and superstition. Since the vast majority of the people lived in the village, its social structure, which remained essentially conservative, inhibited social change. It serves no useful purpose to idealize the reality. The fact has to be admitted that social conditions in the village stood in the way of Bengal's modernization, and there was no hope of any radical change without a thorough-going reconstruction of the village. There is no evidence to show that the ruling class ever formulated any such programme; and the nationalist movement, dominated by the urban middle class, hardly turned to the village. The village continued to decay, and the *dalais* and *paikars* and *mahajans* who operated in the sprawling hinterland sucked away its blood.

To form a true picture of the process of social change going on in this period, we must avoid the mistake of supposing that the immemorial manner of life in the village was changing in the wake of industrialization. In the dualistic economy, a familiar characteristic of Asian economy under the colonial system, capitalist industry developed in a few towns while the feudal mode of production continued in the village, with the result that agriculture remained primitive and the mass

of peasants remained sunk in poverty and ignorance.

One of the most significant developments in this period was the emergence of the working class. Industrialization had called into being this new class which did not exist before. The industrial worker should be differentiated from the manual worker and the artisan. He was part of the factory system, designed for mass production, and worked for wages. Statistics on the growth of the industrial workers in this period are not available, but it seems that workers employed in jute mills, coal mines, railway workshops, engineering factories, ordnance factories, paper mills, tea gardens and miscellaneous factories, though not numerically large in relation to the total population, were a growing force.

The food, clothing and wages of the industrial workers were less bad than they had been in the village, and they had more independence than the agricultural labour who had to depend on the landowner to keep body and soul together. Yet the condition of industrial workers was appalling. The dogma of laissez-faire was popular, and the government did not bother to pass factory acts until the workers learned to organize to protect their interests. We will quote an extract from a contemporary account of the condition of miners in the Bengal collieries: "The working hours are from 6 a.m to 6 p.m, and perhaps later, when extra work is required.... The miners live in small villages, aggregations of huts of mud walls with thatched or tiled roof. The hut consists of one room, sometimes two, of 6 feet by 6 feet.... Women and children work underground.... The women often take their babies, two and three months old, down the mine. The light which the collier carries with him is exceedingly primitive.... The ventilation of the underground workings receives very little attention, and in most collieries none at all. The ignorant native has not yet realised that his health and longevity are in question."¹³

Discontent gradually grew among the workers. In 1895 there was a strike at the Budge Budge Jute Mill which continued

for six weeks. The strike petered out but heralded a new age, the age of trade unionism and socialism, which reflected social tension inherent in the emerging industrial system.

NOTES AND REFERENCES

1. Sunil Kumar Sen, *Studies in Economic Policy and Development of India, 1858-1926*, pp. 30-54.
2. K. Marx, 'The Future Results of British Rule in India', *On Colonialism*, Moscow, 1960, pp. 79-80.
3. Commerce Department, Stores, 1897.
4. *The Bengalee*, 28 January, 1905; *The Howrah District Gazetteer*, p. 108.
5. Commerce Department, Coal and Iron, November, 1889.
6. Sunil Kumar Sen, *op. cit.*, p. 76.
7. Census Reports from 1872 to 1901.
8. A Mitra, *Census of India*, vol. VI, 1951.
9. J. Broomfield, *Elite Conflict in a Plural Society*, p. 16.
10. G. M. Trevelyan, *English Social History*, pp. 483-84.
11. P. Sinha, *Nineteenth Century Bengal*. Dr. Sinha gives a list of Calcutta University graduates and their occupations from 1858 to 1881.
12. J. Broomfield, *op. cit.*, p. 19.
13. W. R. Dunstan, *Report on the Coal Supply of India*, 1898.

IMPACT OF RAILWAYS ON THE ECONOMIC LIFE OF BENGAL

DR. (MRS.) HENA MUKHERJEE

(Institute of Education for Women)

THE transition from the medieval to the modern age is the key-note of Indian history in the nineteenth century, specially in its second half. In the language of Dr. R. C. Majumdar, "it ushered in those forces and movements, in the political, social, religious, literary and economic life which have produced India of today."¹ In the history of this transition, again, the improved transport in the country, as embodied in the introduction and extension of railways, had an important role. We would try to ascertain this role with particular reference to the economic life of Bengal.

The importance of transport in the development and progress of human civilisation is now universally recognised. W. T. Jackman, while writing the history of the development of transport in modern Britain, lays much stress on the relation of transport "to the progress of agriculture, the growth of markets, the advance of industry, the increase of wealth, and many other economic and social factors...."² In the history of transportation, again, the invention of railways is a great landmark. The speed, the comfort and the accommodation offered by the railways were something unknown in the pre-railway age and the effect that the railways had on various aspects of life in a country might be described as revolutionary when compared with those of all other existing means of communication.

Prior to the introduction of railways in the mid-nineteenth century, communications in Bengal as also in other parts of India remained as primitive as ever—namely, through country

boats along rivers, most of them being of poor navigability, and through bullock carts along muddy country roads. Even in 1830, there was no road worth the name throughout India.³ The state of communications in England on the eve of the railway age may be referred to here to show how far India lagged behind in this respect. Railways were a prime necessity in England, too, and yet she had a history of consistent development of communications since the middle of the eighteenth century, and by the time that the railways were being built there, she had, apart from the newly introduced steam-ships plying her rivers, a net-work of turn-pike roads with their attendant stage-coaches and waggons and about 2,600 miles of canals constructed at an outlay of £50,000,000.⁴ In India, even in the mid-nineteenth century, it was only the richer sections of the people who could afford to travel in palanquins or carts, and for the poorer classes there was no other way but to travel even long distances on foot. The only way by which information for administrative purposes could be despatched to different parts of the Empire was to send them by the *dak* or mail-runners.⁵ Active duty on the front or even peace-time manoeuvres often involved on the part of the Army prolonged marching amidst all sorts of weather and this meant, apart from the delay which was very dangerous in an emergency, decreased efficiency of the troops due to fatigue and disease and also high mortality amongst them.⁶ As to the time involved in such journeys, we might have some idea from the following instance of Lord Lawrence, Governor General of India from 1864 to 1869. Lord Lawrence is stated to have performed an extraordinary feat in his younger days, when, travelling day and night in a palanquin, he covered the distance between Calcutta and Delhi in a fortnight—a journey accomplished in the railway era in thirty hours.⁷

Turning to the economic life of the country, we find that the usual manner of carrying goods for commercial purposes was to tranship them in slow country boats of very limited tonnage, along rivers which were sometimes open during only

a very short period of the year. This state of affairs was the result of a complete lack of any constructive policy as regards the development of communications in the country which characterised the greater part of the rule of the East India Company's Government in India—an inactivity at the Government level which was not peculiar to this branch of administration only during this period and which is justifiable to a certain extent by the preoccupation of the Government with continuous wars and conquests with various native powers during this period when the process of expansion of the British Empire in India was as yet far from being complete.

Railways, which began to operate in different parts of India since the mid-fifties of the nineteenth century, brought about a great improvement in the state of affairs as regards the communications of the country, as already described. Before we start discussing the modernising effect of railways on the economic life of Bengal, which is the principal theme of this paper, we might refer briefly to the history of the introduction and the gradual extension of the railways in the province in the second half of the nineteenth century. Throughout this period, the principal railway connecting the Lower Provinces of Bengal with Upper India was the East Indian Railway—or the E.I.R. in short—one of the original trunk railways proposed for India in the mid-forties of the nineteenth century. These proposals for railways in India came from England—a country which during the period from 1844 to 1847 was, to borrow the phrase from a contemporary English journal, in a state of “railway mania”.⁸ This was there a period of great excitement and widespread speculation in railway securities both at home and abroad. The Industrial Revolution created surplus capital in the English money market which, supported by massive and worldwide foreign trade, was always seeking some lucrative employment since the early decades of the nineteenth century. Construction of railways, again, was one of the most important achievements of the Industrial Revolution, and the

expanding railways, both at home and abroad, were attracting the surplus English capital to an increasing extent during this period. Proposals for railways in India, of course, were not initially very much appreciated by the English capitalists since they could not be sure of their commercial prospects in that distant country where conditions were unknown to them. It was the Government undertaking to guarantee 5% dividend which ultimately induced the investing public in England to pay for the Indian railway projects of which the E.I.R. was one.⁹ It was in August, 1849, that the first contract was signed between the Court of Directors of the East India Company and the East Indian Railway Company for the construction of a short experimental line of railway in Bengal,¹⁰ and the route that was ultimately selected for it covered a distance of 121 miles from Howrah to Raniganj via Burdwan.¹¹ The construction of this line began in 1851¹² and even before it was opened to traffic in February 1855,¹³ the contract for the extension of the line up to Delhi via Rajmahal, Patna, Mirzapur, Allahabad, and Tundla (near Agra) was signed in 1854. It was not before 1865 that the entire distance between Howrah and Delhi, nearly 1000 miles, was traversed by the E.I.R.¹⁴ Three other extensions of this railway system came to operate during our period, two of which served the coal-mining areas of the Lower Provinces of Bengal—the Chord line functioning from 1871¹⁵ and the Grand Chord line begun in 1888. Apart from these two, the Jubbulpore section, stretching from Allahabad to Jubbulpore where it was to meet the Great Peninsular Railway, the trunk railway of the Deccan, was opened in 1867.¹⁶

Now, we concentrate on the role of the E.I.R. in the economic life of Bengal in the second half of the nineteenth century. Exchange economy, the most important trend in modern economic life, based on interdependence of areas and specialisation, is possible only where the facilities for cheap and expeditious means of transport are available. In the pre-railway age, because of the lack of adequate com-

munications, India as a whole remained, so to speak, a conglomeration of so many isolated parts, each leading its own economic life based on a system only slightly more advanced than subsistence production. Trade and commerce could not develop properly. The prolonged journey, attended by all sorts of hazards due to poor means of communication, used to have the most adverse effects on the quality of produce, and their prices also could not be kept within reasonable bounds. Railways, by offering the facilities necessary for an exchange economy, made interdependence of various areas possible, and the enlarged demand thus created resulted in the development of the local resources. Railways, furthermore, by removing to a great extent the elements of uncertainty in the movement of goods and by opening ready markets, did help to regulate the prices on a more sound and reasonable basis. Of course, these developments in the economic life of India in the wake of the introduction of railways in the country should be viewed in this way only in a relative sense. The total mileage of railways opened in India even in the last quarter of the nineteenth century was insignificant, when compared to the vast expanse of the country, and there was also the great need of the development of roads and river routes to act as feeders to the expanding railway net-work. Under these circumstances, the above-mentioned economic process of interdependence of areas and specialisation having favourable effect on the prices as well, could not be said to have been carried to any remarkable extent in our period. Besides, interdependence of areas and specialisation presuppose the exploitation of the productive capabilities of the respective areas to such a maximum extent as to result in surplus production over and above the needs of local consumption. This, again, depends on the availability of certain other prerequisites in the form of sufficient capital, trained labour, improved machinery and so on. A high economic standard as the result of the proper development of all these factors is yet to be achieved in the present-day India. All

that can be said here is that with the commencement of the railways, the whole process was accelerated. Railways, following which also came feeder roads and river routes, started fulfilling the first requirement as mentioned above, namely, the means of communication. Possibilities thus opened led to the gradual development of other factors. Along with the beginning of the operation of the E.I.R. followed by that of other smaller railways and other means of communication that developed in the wake of expansion of railways, these changes were noticeable in the Gangetic valley even before the end of the nineteenth century. Now, we would note how far Bengal was affected by these changes. We would review the position with reference, first, to the growth of industries; secondly, to the developments in the sphere of agriculture; and, lastly, to those in respect of trade.

In the sphere of industry, we find that coal mining in the Burdwan area of Bengal made a rapid headway during our period. We would now try to establish the relation between the development of this coal-field and the operation of the E.I.R. in the vicinity, and this will show that the latter was the most obvious factor in its development. In fact, the first rudimentary beginning of the modern large-scale industries in India can be traced back to the commencement of railways in the country. In the pre-railway age, when there was no trained labour, no improved machinery and no adequate means of communication, the amount of money to be invested in such an enterprise had to be immense which had no chance of being commensurate with a profitable return. Naturally, there was no immediate impetus to the employment of capital in such projects. The railways provided improved facilities of transport which made possible the collection of materials from a variety of sources and also the selling of finished products to a wider and ready market. One of the basic pre-conditions for the growth of industries was

thus fulfilled and industries could grow now. This was exactly what happened in the case of the Burdwan coal-field.

About the middle of the nineteenth century, some amount of trade in coal was going on between Burdwan and Calcutta. The principal collieries were opened in Raniganj in Burdwan district¹⁷ and coal was also discovered in the neighbouring districts of Birbhum, Rajmahal, Cuttack, Singhbhum, Palamau and also in areas close to the river Ajay.¹⁸ The work of mining was not carried on properly for all these years. A geological report of 1815 tells us that at Raniganj, the first bed of coal was to be reached at a depth of 45 feet 3 inches.¹⁹ Even in 1841, the maximum depth attained was 88 feet only.²⁰ But since the 1830's, the utility of these mines as sources of fuel supply for the newly introduced steam vessels on the rivers of India was being increasingly felt,²¹ and the supplies to Calcutta were on the increase. The volume of coal transported from the Burdwan collieries to Calcutta by the river Damodar alone—the main line of communication between Burdwan and Calcutta in those days—was stated in 1844 to amount to twenty lakh maunds in a favourable season.²²

The difficulties of transportation, however, restricted this trade and made it a laborious operation. The river Damodar, violent in the rains and shallow in summer, was navigable only for a short period in the year. Loaded in bullock-carts from the pits, coal was brought to the river Damodar and so by water it used to be taken southward to Amta, a main trading station on the Damodar in those days,²³ a few miles from Howrah. From Amta to Calcutta, it thus involved, apart from the crossing of the river Hooghly, carriage overland, usually in bullock-carts, on both sides of that river. The time involved was a great hindrance to the development of this trade. Since the river was not navigable all round the year, coal dug from time to time had to be stocked on the banks of the river till the favourable season. The loss of time thus caused, when added to that taken in transportation in bullock-carts and boats, led in many cases to the loss of two seasons though the direct

distance by land between Calcutta and Burdwan was only 75 miles.²⁴ The journey along the Damodar—especially during the rains when this river was overflooded—was precarious and the loss from boat-wrecks used to be enormous—20% of the whole cargo, as stated in 1844.²⁵ All these causes, in addition to the cost of transport, led to the high price of this article in Calcutta. While the price of coal at the pit-head was about half anna per maund, in Calcutta it used to be sold at four annas per maund in the forties.²⁶ The same difficulties attended the transport of coal along the river Ajay, the other river traversing the coal district to meet the Bhagirathi.²⁷

In February, 1855, the experimental line of the E.I.R. from Howrah to Raniganj in the coal district was opened to traffic. This railway offered itself as a much better substitute for the slow, hazardous and consequently, in its ultimate cost, expensive boat traffic along the Damodar. It facilitated, in the first instance, the transport of coal to the existing demand centres in Calcutta—demand arising there from the needs of the newly introduced steam vessels along the Ganges.²⁸ At the same time, the railways paved the way for the emergence of new demand centres. Coal from the Burdwan mines, from now on, could be transported towards Calcutta in increasing quantities, at a comparatively cheap rate, and in a much shorter period of time. The possibilities of obtaining fuel cheaply acted as a direct impetus to the growth of new industries in Calcutta and its neighbourhood. The manufacture of jute, with the help of steam-driven engines, was started at Rishra near Serampore, lying on the route of the experimental line.²⁹ And, in this early period, it was the railway itself which was the greatest consumer of the coal raised from the Burdwan coal-field. It was from the middle of the year 1855 that the use of the Burdwan coal began on the E.I.R.³⁰ This suddenly created a very enlarged demand for this coal and with the work of construction going ahead on the extensions of the E.I.R. towards the Upper Provinces, the possibilities of this demand being far more enlarged were apparent.

Apart from its use in locomotives, a large amount of coal was needed for the work of the construction of the railway line which involved such processes as brick-burning, etc.³¹

Under the impetus of these demands, the yearly output from the Burdwan coal-field was increasing steadily. In 1855 this was 100,000 tons.³² But in 1859 it rose to 325,000³³ tons approximately. There was a steady increase in the coal traffic on the section of the railway opened. While in 1855 the receipts from the coal traffic on this line was £1949, in 1859 these rose to £71,736.³⁴

The increasing supplies of Burdwan coal as noted above had the most favourable effect on its price in relation to that of imported coal. In 1852, the English coal was selling in the neighbourhood of Calcutta from 27s 9d a ton to 28s 8d a ton. During the same period, the price of the Burdwan coal was quoted there at 20s 9d a ton.³⁵ From 1855, when the E.I.R. began to traverse the coal-field, a sharp reduction in the price of the Burdwan coal was noticeable. Because of the dearth of necessary statistics, we cannot, of course, show this reduction in very accurate terms. But the available statistics enable us to ascertain this much that while in 1851, the price of the Burdwan coal was about one-third of that of the imported English coke,³⁶ in December, 1855, when it had been one full year since the railway had been operating in the vicinity, this was reduced to one-sixth of the price of the imported English coke.³⁷ Since there is no reason to assume any notable rise in the price of the English coke during this period,³⁸ the change in the price ratio as mentioned above might be said to have been due mainly to the reduction in the price of Burdwan coal.

The development of the Burdwan coal-field followed the same pattern in the succeeding years. Railways continued to play a double role in the story of its development. As previously, they remained the greatest consumers of the Burdwan coal. Besides, they were carrying coal for the growing industries in the vicinity of Calcutta. Thus, in the middle of

the year 1865, along with the completion of the Jumna bridge at Allahabad, the entire stretch of the main line of the E.I.R. from Howrah to the left bank of the Jumna at Delhi—more than 1000 miles—was opened to the public.³⁹ This enabled the E.I.R. to carry this coal in sections above this bridge, and this resulted in almost doubling the quantity used by this railway—from 28,27,953 maunds in 1865⁴⁰ to 50,79,612 maunds in 1866.⁴¹ Towards the end of 1862, again, two other railways, the Eastern Bengal Railway and the Bengal Nagpur Railway, were opened to traffic. Both these railways had Calcutta as their terminus and had therefore easy access to Burdwan coal.⁴² The Delhi-Ambala section of the Delhi-Punjab Railway was the other important railway using the Burdwan coal during this period, and it could make use of the supplies at Delhi, the terminus of the E.I.R. in Upper India.⁴³ Amongst the industries using this coal during this period, i.e. the sixties of the nineteenth century, the most important was jute. The number of jute mills in the neighbourhood of Calcutta had by this time multiplied to a great extent.⁴⁴ Towards the end of the nineteenth century, apart from meeting the needs of Upper India, the Burdwan coal-field started exporting coal to Straits Settlement, Ceylon and Western India.⁴⁵ The rapid extension of the E.I.R. in the coal area facilitated all these operations. The first extension was made in the early sixties when the experimental line, which then terminated at Raniganj, was carried up to Barakar, about 22 miles further northward.⁴⁶ In the sixties also, a small branch from near Barakar to Singharron was constructed.⁴⁷ The Chord line, traversing the entire coal district from south to north, with a branch to the newly opened coal mines of Karharbari, was completed by 1871, whereby the circuitous route via Rajmahal for the carriage of coal to Upper India could be avoided.

As a result of the interplay of these factors, i.e. increasing demand on the one hand and the increasing transport facilities on the other, which made it possible to meet these demands,

the output from the Burdwan coal-field was high during all these years. By the late sixties of the nineteenth century it already rose to above 1,00,00,000 maunds a year.⁴⁸ In 1860 the total number of steam engines in use in the Burdwan coal-field was 28, with an aggregate horse power of 490, while in 1868, 61 engines with an aggregate of 867 horse power were in use.⁴⁹ The characteristic feature of Indian coal resources is their extreme concentration in the area under discussion. With increasing facilities in the succeeding years, the production of this coal-field was continually on the increase, and it is because of the speedy development of the resources of this area that India now ranks high amongst the coal-producing countries of the world.

Turning to the impact of the railways on the agricultural history of the region, we see the development of the same interdependence of different areas and specialisation in respect of agricultural produce. The impact of the railways on the agricultural development of India as a whole over the last hundred years of railway expansion in the country has been far-reaching. Indian economy is, and has been, through ages, basically agricultural. The difficulties of transport, prior to the development of railways and other means of communication, however, resulted in the market being too limited and specialisation was not generally widely practised. Each unit, depending mainly on its local resources, was subject to immense fluctuations of prices even within a very limited period of time. Again, in India, agriculture had always been dependent on the monsoon, and its failure in any region in a particular year had always meant, in the absence of the means of transport facilitating supplies from surplus areas, the outbreak of local famines which caused prolonged sufferings and even some deaths. Railways, in the first instance, enlarged the market for the produce of the village and thereby gave a great impetus to increased and

specialised production. The enlarged demand they created also increased the prices of this produce, and the distribution of supplies they facilitated led, to a certain extent, to the uniformity of prices amongst different areas. Different parts of the country became increasingly interdependent for their supplies of agricultural produce and this was of great importance in times of famine in the country. All these developments we would now exemplify with particular reference to Bengal.

In respect of specialisation, we would show how the expanding markets in Bengal were being provided increasingly with cotton from the North Western Provinces as the result of the operation of the railways, and how this enlarged demand led to increased production and higher prices of this principal agricultural produce of the latter province. In the second half of the nineteenth century there was created in Bengal a large market for the Upper India cotton. This demand was created, in the first place, by the indigenous cotton mills established in the vicinity of Calcutta. The consumption by these mills of the Upper India cotton for the year 1876-77 was estimated to be 1,15,066 maunds.⁵⁰ In the early sixties of the nineteenth century, again, there arose an external demand which also could be met through the port of Calcutta, namely, the demand from England. England was during this period one of the largest importers of cotton for her rapidly developing industries. The country from which her supplies were usually drawn was the United States. But the Mexican War of 1846-48, when the supplies from the U.S.A. were on the decline, definitely showed the importance of India as an alternative source to fall back upon.⁵¹ It was not long before that the occasion did arise when England had to turn to India for large supplies of cotton. In the early sixties of the nineteenth century the Civil War in the U.S.A. reduced the supplies from that country to a minimum, and England was forced to buy cotton from other sources.⁵² Demands on India during these years were exceptional. There was a heavy pressure on the sources of supplies in the N.W. Provinces as well. The

period of this cotton boom was, of course, over by the mid-sixties. But the external market for this Upper Indian cotton was not completely lost. During all these years, there was a steady export of this cotton from the port of Calcutta to Great Britain.⁵³

Improved communications in the Gangetic Valley, specially in the form of railways, facilitated the steady supply of the Upper Indian cotton to meet these demands in Calcutta. In the early sixties the mileage of the E.I.R. opened within the N. W. Provinces was far too small when compared to that of roads, the former being 545 and the latter 1,960.⁵⁴ There were, again, breaks at certain points on the railway. As, for instance, the bridge over the Jumna at Allahabad was not yet complete.⁵⁵ But, from the early sixties, wherever available, the railway was being resorted to for the transport of cotton down to Calcutta to a much greater extent than the traditional means of conveyance, such as carts and country boats. Thus, between 9 August and 9 October, 1862, more than 22,567 maunds of cotton arrived by rail at Allahabad from Agra for transport to Calcutta, while the arrival by carts and country boats there during the same period was 1,000 maunds and 5,000 maunds respectively.⁵⁶ In 1876-77, the imports of Upper Indian cotton into Calcutta amounted to 1,56,200 maunds from Agra, 1,03,800 maunds from Cawnpore, and 70,200 maunds from Delhi. The major portion of these imports was carried by the E.I.R. while by road, these amounted to only 1,744 maunds and by river, no import was reported.⁵⁷

These heavy imports into Bengal led to the increased production and higher prices of this main agricultural produce of the N. W. Provinces. Both the soil and the climatic conditions in the N. W. Provinces were described to be peculiarly suitable for the cultivation of cotton to any extent. But, even in 1849, only 10,02,042 acres of land in the province was sown with cotton though the area suitable for such cultivation was reported to be 16,89,682 acres.⁵⁸ The reason for it was the limited market for the surplus produce of the province

due to lack of communications. But, in the year 1862-63, the area under cotton cultivation in the province was roughly 1,177,000 acres of land.⁶⁰ There was a further increase in the cotton cultivation of the province in the succeeding years, and in 1886-87, no less than 1,768,000 acres of land in the province was sown with cotton.⁶¹ The influence of this enlarged demand on the price of this article we would try to show by a reference to conditions in the year 1862. Up to May or June 1862, the market price of cleaned cotton in the province varied from nine rupees to sixteen rupees per maund. But the sudden demand from England created a spirit of speculation and by September-October of the same year, this price rose to fourteen to thirty rupees per maund.⁶¹

The role of transport became all the more important in times of famine when production of food crops proved deficient in particular areas. With the improvement of communications in India since the middle of the nineteenth century, a completely new tendency began to operate on the availability of the local produce, i.e. the demands of an extended market having higher ruling prices—market of both inland and external character. Thus, exports by sea from the Lower Provinces of Bengal in the two years immediately preceding the famine of 1866 were described to be upon an unprecedented scale, the quantity being 1,64,23,478 maunds for the year 1863-64 and 1,91,86,522 maunds for the year 1864-65.⁶² The surplus produce which used to be stored locally for consumption and sale in years of low produce, was being carried off by the railways and other means of communication to markets beyond and this increased the possibilities of scarcity whenever the produce in any area was below the normal average.

But here we have to remember that there was a limit, under the laws of demand and supply having a free interplay in those years of free trade and *laissez faire* political economy, to the period during which the movement of goods would remain outward. The prices in the scarcity areas, on the increase since supplies were limited, would reach a level in

course of time that would divert the outward movements of grain to those areas and these would, ultimately, reduce prices and stabilise conditions there. And, as in the outward movement of grain, so also in its inward movement, the role of improved transport would be vitally important. Referring to the Lower Provinces of Bengal, the process can be shown to have been in operation during the famine in Bihar in 1874. The southern districts of Bihar were saved from a calamity by the penetration of private trade carried by the E.I.R., the principal railway of the area, when the prices reached a certain maximum there. The districts north of the Ganges were provided entirely by Government relief supplies and almost the whole amount of such supplies also, estimated at about 300,000 tons, was carried by the E.I.R.⁶³ Again, since due to improved transport in the country, famine could never mean an absolute scarcity of food but only its higher prices, construction of railways and other public works, offering scope of employment to unskilled labour, did have an ameliorating effect in times of such calamity. With such an object in view, the construction of the Chord line of the E.I.R. was being insisted upon by the administrative authorities during the famine of 1866 in Bengal.⁶⁴

Lastly, we would show how the newly introduced railways in Bengal gave a new impetus to the commerce of the province by attracting this commerce to itself from its traditional channel, namely, the river Ganges. So far as the inland trade of the area is concerned, the available facts give us the impression that even in the last quarter of the nineteenth century, it continued to resort, for its major part, specially in years of normal commercial activities, to the traditional river routes along the Ganges and its tributaries. Inland trade of the area continued to be in the hands of the country merchants, and these people, from the fact of the comparatively short distance to be covered by their goods, could possibly afford to resort to the slower but, generally speaking, less expensive river routes.

Rice was the largest item of inland trade of the country.⁶⁵ Different places of Bihar and the North Western Provinces used to receive large supplies of rice from Malda and Dinajpore districts in North Bengal and, to a lesser extent, from Eastern and Central Bengal.⁶⁶ Almost the entire quantity of this rice used to be sent along the Ganges,⁶⁷ though, at least, the Central Bengal districts like Burdwan and Murshidabad could avail of the E.I.R. passing through them for their supplies and the supplies from the districts of Malda and Dinajpore also could revert to that railway on crossing the Ganges at Sahebganj.

Almost reverse was the position in respect of the foreign trade of the area. A greater absorption by the railway of both exports and imports in respect of this branch of trade is noticeable, and the amount of both of them was on the increase. The principal items of export from the port of Calcutta during our period were wheat, oil-seeds, indigo and opium. Throughout these years, the E.I.R. was carrying increasing quantities of wheat from the N. W. Provinces and Bihar to Calcutta for export to Great Britain and other countries. In 1872-73, the quantity so carried was 1,96,560 maunds, while it became, after a continuous yearly increase, more than 52,85,635 maunds in 1876-77.⁶⁸ In the mid-seventies of the nineteenth century, the value of the total exports of linseeds alone from the N. W. Provinces through the port of Calcutta generally exceeded £1,000,000,⁶⁹ and during all these years, the E.I.R. was attracting to itself the greater part of these supplies. Indigo was largely cultivated in Bihar and large consignments used to go from here to Calcutta by the E.I.R. The total registered import of indigo in Calcutta during the year 1875-76 amounted to 1,19,600 maunds, of which 1,04,970 maunds were carried by the E.I.R.⁷⁰ In 1874, the traffic in opium, which used to be supplied from Bihar and Benares, amounted to 6,271 tons and in the following year, to 6,506 tons.⁷¹

On the import side also, the bulk of the supplies was being carried by the E.I.R. and the supplies were on the increase. Cotton piece-goods and salt were the most important items

of import through the port of Calcutta during this period. In the year 1876-77, the value of the total import of cotton piece-goods amounted to Rs. 9,67,63,105 and the inland export from Calcutta of these articles by the E.I.R. during that year was valued at Rs. 7,38,92,800.⁷² The salt traffic of the E.I.R. towards the N. W. Provinces rose from 14,70,000 maunds in 1872 to about 17,00,000 maunds in 1874.⁷³

Thus, the goods traffic in the area, at least in the sphere of its foreign trade, was being increasingly absorbed by the railway operating there. This process of absorption was a feature common to different railways operating in different parts of India in the second half of the nineteenth century, and the result was a steady development of the foreign trade of India. It is, however, a matter of controversy whether this development was beneficial for the country as a whole. Apparently, it seems that the steady exports of raw materials and foodstuffs as facilitated by the railways in India had been most injurious to the country. Her nascent industries thus remained ill-provided and her people ill-fed. But the question here is whether Indian foreign trade could assume any other character in the second half of the nineteenth century. Her indigenous industries, having failed to compete with the cheap machine-made goods from the west, were on the decline and the modern industries which came in the wake of the railways there, were yet a long way to full development. Under the circumstances, if India were to earn foreign money, she could do it by the sale of her only available resources, and her only available resources, then, were the produce of her soil.

Here, we conclude our discussion of the modernising effect of the railways on the economic history of the nineteenth-century Bengal. The achievements of this early phase of the operation of the railways in the region, while not spectacular by themselves, are of great historical importance. They represent the first phase of a long history of further developments in the succeeding years.

NOTES AND REFERENCES

1. R. C. Majumdar, *Glimpses of Bengal in the Nineteenth Century* (Calcutta, 1960), p. 1.
2. W. T. Jackman, *Development of Transportation in England* (London, 1962), Preface, p. xxxi.
3. J. Strachey, *India, Its Administration and Progress* (London, 1911), p. 231.
4. R. D. Baxter, 'Railway Extension and Its Results', *Journal of the Statistical Society*, vol. XXIX (1866), reprinted in *Essays in Economic History*, edited by E. M. Carus-Wilson (London, 1962), vol. III, p. 33.
5. G. R. Clarke, *The Post Office of India and Its Story* (New York, 1921), p. 16.
6. Dalhousie's Minute, 20 April 1853, *Parliamentary Papers*, (H. C.), 1852-53, LXXVI (787), p. 118.
7. John and Richard Strachey, *Finances and Public Works of India* (London, 1882), p. 2.
8. R. D. Baxter, 'Railway Extension and Its Results', *op. cit.*, p. 2.
9. The text of the contract between the E. I. Co. and the E. I. Rly. Co., 17 August 1849, *Parliamentary Papers*, (H. C.), 1859, XIX, (259), p. 4. Contracts with all the railway companies projecting railways in India during this period and even later contained identical terms.
10. *Ibid.*, p. 4.
11. Dalhousie's Minute, 4 July 1850, as mentioned in the Report dated 29 January, 1851, by J. P. Kennedy, the Consulting Engineer to the Government of India, *The Selections from the Records of the Government of India* (abv. *Sel. Govt. of India*), No. 1, pp. 39-40.
12. Report to the Secretary of State for India in Council on Railways in India for 1862-63, *Parliamentary Papers*, (H. C.), 1863, XLIII, (3168), p. 12.
13. *Ibid.*
14. Report to the Secy. of State for India in Council on Rlys. in India for 1865-66, *Parliamentary Papers*, (H. C.), 1866, LII, (3696), p. 3.
15. Report to the Secy. of State for India in Council on Rlys. in India for 1870-71, *Parliamentary Papers*, (H. C.), 1871, LI, (C. 418), p. 3.
16. Report to the Secy. of State for India in Council on Rlys. in India for 1867-68, *Parliamentary Papers*, (H. C.), 1867-68, LI, (4035), p. 3.
17. *Report of the Committee for Investigating the Coal and Mineral Resources of India for the year 1838*, vol. I, p. 19, Section I.
18. *Report of the Committee for Investigating the Coal and Mineral Resources of India for the year 1841*, vol. I, Introduction, p. v.
19. *Report of the Committee for Investigating the Coal and Mineral Resources of India for the year 1838*, p. 19, Section I.
20. *Report of the Committee for Investigating the Coal and Mineral Resources of India for the year 1841*, vol. II, p. 19.
21. *Report of the Committee for Investigating the Coal and Mineral Resources of India for the year 1838*, p. 17, Section I.
22. Replies of Dwarkanath Tagore to enquiries made on the subject, as referred to in Stephenson's letter to Theobald, 9 August 1844. R. M. Stephenson,

- 'Report upon the Practicability and Advantages of Introduction of Railways into British India' (London, 1844), pp. 46-47, attached to *Railway Home Correspondence* (abb. *Rly. Home Corrs.*), 'A', vol. I.
23. Extract of a letter from J. Erskine, owner of coal-mines in the near-by Ajay area and residing there too (date not given), *ibid.*, p. 47.
 24. Stephenson to Theobald, 3 August, 1844, Stephenson's Report, etc., *op. cit.*, p. 42.
 25. Replies of Dwarkanath Tagore to enquiries made on the subject, as referred to in Stephenson's letter to Theobald, 3 August, 1844, *ibid.*, p. 42.
 26. Extract of a letter from J. Erskine (date not given), *ibid.*, p. 47.
 27. *Reports and Abstracts of Proceedings of a Committee for the Investigation of the Coal and Mineral Resources of India up to May 1841*, p. 19.
 28. *Supra*, p. 7.
 29. V. Anstey, *The Economic Development of India* (London, 4th ed., 1952), p. 279.
 30. Financial (Railway) Despatch of the Court of Directors to the Governor-General-in-Council, 17 Sept. 1856, No. 28, Railway Despatches to Bengal and India, vol. II, p. 291.
 31. Report on Coal Resources and Production of India by T. Oldham, 1867, App. III, p. xxiv, *Sel. Govt. of India*, No. 64.
 32. A. M. Rendel, the Consulting Engineer to the E. I. Rly. Co. in England and George Turnbull, the Chief Engineer of that Rly. Co. in India, to D. I. Noad, the Secy. to that Rly. Co., 23 July 1855, *Rly. Home Corrs.*, 'A', vol. IX.
 33. Report on Coal Resources and Production of India by T. Oldham, 1861, App. III, p. xxiv, *Sel. Govt. of India*, No. 64.
 34. Report to the Secy. of State for India in Council on Rlys. in India to the end of 1859, *Parliamentary Papers*, (H. C.), 1860, LII, (2669), p. 32.
 35. Turnbull to W. E. Baker, the Consulting Engineer to the Govt. of India, Railway Letters and Enclosures from Bengal and India (abb. *Rly. Letts. Encl.*), vol. I.
 36. Turnbull to Noad, 30 June 1851, *Rly. Letts. Encl.*, vol. III.
 37. This we assume with reference to the proportionate reduction in the fuel cost on the E.I.R. since December 1855 when Burdwan coal began to be used as fuel by it in the place of imported English coke. cf. Fin. (Rly. Des., 17 Sept. 1856, *Rly. Des. Beng. Ind.*, vol. II, p. 291).
 38. The basis of our assumption here is the Section on coal in McCulloch's *Commercial Dictionary* (London, 1859), vol. I, pp. 295-304.
 39. *Supra*, p. 4.
 40. *The Statistical Reporter* (Calcutta), 10 Sept. 1869, p. 27.
 41. *Ibid.*
 42. *Ibid.*
 43. *Ibid.*
 44. Anstey, *op. cit.*, p. 279.
 45. S. C. Ghose, *A Monograph on Indian Railway Rates* (Calcutta, 1918), p. 159.
 46. Report to the Secy. of State for India in Council on Rlys. in India for 1865-66, *Parliamentary Papers*, (H. C.), 1866, LII, (3696), p. 4.

47. Report to the Secy. of State for India in Council on Rlys. in India for 1868-69, *Parliamentary Papers*, (H. C.), 1868-69, XLVII, (4190), App., p. 29.
48. Report to the Secy. of State for India in Council on Rlys. in India for 1870-71, *Parliamentary Papers*, (H. C.), 1871, LI, (C. 418), p. 3.
49. *The Statistical Reporter*, 10 Sept. 1869, p. 27.
50. *Report on the Internal Trade of Bengal for 1876-77*, p. 8.
51. Memorials of the Directors of the Chambers of Commerce and Manufactures at Glasgow and Manchester, to Court, dated 1 July 1847 and 17 June 1847, respectively, *Rly. Home Comrs.*, 'A', vol. I.
52. J. H. Clapham, *An Economic History of Modern Britain, 1850-1886*, vol. II (London, 1932), p. 365.
53. Cf. *Reports on the Internal Trade of Bengal* for these years.
54. Statement showing the district mileage for roads and railways in the N. W. Provinces, Encl. 6, in No. 64, *Parliamentary Papers*, (H. C.), 1863, XLIV, (132), p. 220.
55. *Supra*, p. 4.
56. G. H. M. Batten, Secy. to Sudder Board of Revenue, N. W. Provinces, Allahabad, to Sir George Couper, Secy. to Govt. of N. W. Provinces, 18 Oct. 1862, *Parliamentary Papers*, (H. C.), 1863, XLIV, (132), p. 243.
57. *Report on the Internal Trade of Bengal for 1876-77*, p. 88.
58. W. Muir, Secy. Sudder Board of Revenue, N. W. Provinces, to C. Allen, Offg. Secy. to Govt. of N. W. Provinces, 27 Feb. 1849, *Parliamentary Papers*, (H. C.), 1857, XXXII, (296), p. 38.
59. Batten to Couper, 18 Oct. 1862, *Parliamentary Papers*, (H. C.), 1863, XLIV, (132), p. 67.
60. *Statistical Tables Relating to Inland Cotton* (A. F. B.), Bombay, 1889, p. 10.
61. Batten to Couper, 18 Oct. 1862, *Parliamentary Papers*, (H. C.), 1863, XLIV, (132), p. 243.
62. A Section of the Board of Revenue's Preliminary Report on the Land Revenue Administration for 1865-66, *Parliamentary Papers*, (H. C.), 1867, LI, (33), p. 55.
63. *Bengal Administration Report, 1874-75*, p. 319.
64. Narrative of the distress and scarcity in the Lower Provinces by A. Eden, Secy. to Govt. of Bengal, accompanying Eden's letter to Secy. to Govt. of India, Home Dept., 10 June 1866, *Parliamentary Papers*, (H. C.), 1867, LI, (335), p. 18.
65. *Bengal Administration Report, 1874-75*, p. 253.
66. *Ibid.*, pp. 253-54.
67. *Ibid.*, p. 253.
68. *Report on the Internal Trade of Bengal for 1876-77*, p. 56.
69. *Bengal Administration Report, 1874-75*, p. 228.
70. *Report on the Internal Trade of Bengal for 1876-77*, p. 79.
71. *Bengal Administration Report, 1874-75*, p. 351.
72. *Report on the Internal Trade of Bengal for 1877-78*, p. 50.
73. *Report on the Internal Trade of Bengal for 1876-77*, p. 62.

GROWTH OF THE INTERNAL MARKET: A STUDY IN VILLAGE ECONOMY

DR. TARASANKAR BANERJEE

(Visva-Bharati University)

IN THE second half of the 19th century Bengal stood at the threshold of mighty changes in the socio-economic set-up. The political revolution at Plassey combined with the impact of the Industrial Revolution in England later had accelerated the process of an economic transition in Bengal in the first half of the 19th century. The period between 1793 and 1833 witnessed the gradual transformation of the traditional economy in Bengal which centred round the concept of self-sufficient village community. It was essentially a form of feudal economy which now stood face to face with the challenge of the growing industrial economy of England. So far as the internal market was concerned, Bengal presented a dismal picture. Integrated economic structure was a myth. So far as the interests of the producers were concerned, Bengal was economically dismembered, and only fragmented markets existed much to the disadvantage of the industrial capitalism of England. Traditionally, in Bengal, there existed what is known as the self-sufficient village economy. There was a mere aggregation of a large number of self-sufficient, heterogeneous economic units, which were villages in the actual sense of that term. They differed in every respect from one another. Charles Trevelyan puts it in a different way. Within the boundaries of the village, he observed, there existed "a barbarous state of things in which everybody is obliged to produce and manufacture everything he requires for his own consumption."¹ Though the Bengal villages were not so secluded as those in other parts of India, there is much substance in Denzil Ibbet-

son's observation that the village looked to the outside world "for little more than its salt, its spices, the fine cloth for its holiday clothes, and the coin in which it pays its revenue."² There was a peculiar co-existence of scarcity and abundance. When one village enjoyed plenty of foodgrains, another perhaps was dreading the visit of a famine in the near future. Prices of commodities varied greatly from village to village. Village economy and market integration leading to the growth of a wider market are two mutually exclusive concepts. This chaotic market condition could not be allowed to exist in the interests of the industrial capitalism of England. So there began a systematic attempt to remove the impediments to the growth of the internal market in Bengal. The political power of the English combined with their administrative capacity made the task of the East India Company easier. It is interesting to observe that the Company at first tried to maintain the status quo as far as possible on the plea of revenue; but the pressure of industrial capital was irresistible. This is quite discernible in the tussle over the abolition of the internal customs barriers in Bengal. The Report of Charles Trevelyan proved that this plea of revenue was a hollow one. Moreover, their own difficult economic condition compelled the Company ultimately to give way and carry out measures which facilitated the growth of an integrated internal market in Bengal. The task was begun by the Company, but its pace was accelerated in the second half of the 19th century.

The greatest hindrance to the growth of the internal market was the existence of internal trade barriers in the shape of transit and town duties.³ A detailed analysis of these duties is out of place here. But it must be said that internal trade barriers in the shape of transit and town duties rendered free entry of goods into the market impossible. While inter-regional trade was badly hampered by the imposition of transit duties, regional specialisation was practically impos-

sible for the levy of town duties. These customs barriers cut the country into numerous petty markets, each one of which was too small to afford a scope for industrial development. The markets encircled by customs cordons offered limited scope for the improvement of the country's productivity.⁴ When production is carried on on a large scale, materials are drawn from a considerable distance. But so oppressive was the system in this country that the manufacturer had to pay duty twice—first, on the raw materials, and then on the finished products. This necessarily led to the rise in the cost of production, and in consequence, Indian goods could not stand in competition with foreign machine products. With the growing application of machineries in the method of production and the ever-increasing division of labour, a far more extensive market was necessary than what was afforded by the space cordoned by *Chokeys*. Trevelyan rightly observed that from the economic standpoint "the injurious effect of the internal duties upon the progress of a country in wealth and improvement mainly consists in their preventing the natural distribution of its resources to the most profitable employments."⁵ The battle against these duties was a bitter one. The Company tried hard to retain them as they earned a revenue, but wanted to mitigate the sufferings of the people by suitably modifying them. Pressure was exerted upon the Company from different corners. Evidences before the Parliamentary Committees dealing with revenue and customs in the first half of the 19th century would show how vexatious these duties were. For some time the Company tossed between the ideas of abolition and reform so far as these duties were concerned. Fortunately, the publication of the Trevelyan Report in 1834 sounded the death knell of those duties. In his evidence before the Select Committee of the House of Lords in 1853, Trevelyan himself remarked, "If my report had remained unpublished and had merely undergone the usual course of official discussion, years might have passed before the transit and town duties would have been abolished. But

instead of that, the report was published, and everybody at once felt that the system was condemned." The Company was now urged on by this, and the transit and town duties were abolished in 1836. The abolition of these duties was an important landmark in the creation of an integrated internal market in Bengal. This 'curse of the country' stood like a rock in the way of economic growth. Trevelyan considered this step as "removing an obstacle which impedes the free egress of the water of a fountain."⁶ Hamilton's view that it was the beginning of the "growth of economic freedom"⁷ in this country can only be accepted with a big grain of salt. But it is true that the abolition of the internal trade barriers in the shape of those duties was the first positive step towards the growth of the internal market in Bengal. It signalled the beginning of the collapse of the 'village economy' which was but an anachronism in the age of industrial capitalism.

By far the most important factor in the growth of the internal market was the development of communications. Inter-regional trade, so necessary for market integration, could not flourish to any considerable extent in the absence of transport facilities. So long as these were not increased, it was useless to expect a linking up of the widely diffused markets. The difficulties of internal communication made the untapped interior markets inaccessible. Comparatively speaking, the internal traffic in Bengal was more active than that in other parts of India because of the existence of a number of navigable rivers. The Ganges, the Brahmaputra, the Meghna and Jumna, the Mahananda, the Teesta and others were vital arteries of commerce in Bengal. The bulk of the internal commerce was carried along these natural highways. In the absence of good roads, river-borne traffic was the only hope. Moreover, river-borne carriage was less expensive and less hazardous than the land carriage (the ratio of the cost of carriage by land and water was nearly 3:1). In many parts of Bengal river traffic was also easier in the early part of the 19th century.

But there was one great limitation to river traffic. During the dry season many of the rivers were less navigable and there was a comparative decline in river traffic.

There is no denying the fact that Bengal was almost destitute of good roads. Except for a few highways, what existed could be described only as pathways. A pitiable picture of roads in the Bengal Presidency was sketched in John Shore's *Notes On Indian Affairs*. "As to the roads," he wrote in May, 1833, "excepting those within the limits of the civil stations, 16 miles between Calcutta and Barrackpore is all that we have to boast of." Matters did not improve much in the next 20 years. We find Mr. A. S. Finlay stating the following before the Select Committee on Indian Territories, 1852-53: "I consider that at present there are no roads in India suitable for commercial purposes of any extent. I am aware that there are what are called roads; there is one from Calcutta to Delhi; but that is more of a military road than anything else...." In the absence of proper care, the condition of the existing roads in Bengal deteriorated day by day. Lt. W. H. Greathead's report on the communication between Calcutta and Dacca (1855) painfully revealed the wretched condition of the lines of communication between these two great commercial centres of the country.⁸ The Company's government did little to construct commercial roads, neither did they maintain the existing roads properly. In the year 1848 the total road mileage in the entire Bengal Presidency did not exceed 2,589 miles.⁹ The main responsibility for road-building and maintenance was thrown upon the zemindars who could not be expected to undertake the gigantic task. After the transfer of power in 1858, all attention was given to improving road communication, and by 1900 there were nearly 40,000 miles of roads in Bengal.¹⁰

The introduction of the railways, however, brought about a revolution in the system of communication in the country. The feasibility of having railroads in India was debated for quite some time and at last the first carriage with steam

traction was drawn in 1855. By the year 1900 nearly 1,600 miles of railways had been constructed in Bengal, linking up various commercial centres. The contribution of the railways to the growth of the internal market can hardly be overemphasised. With its speed and punctuality the steam traction considerably helped in the better distribution of the country's resources. Rail traffic reduced to a great extent the cost of inland transport. It opened up new markets for the machine economy with a marked tendency towards equalisation of prices. The establishment of the railways itself gave a tremendous boost to coal industry, and subsequently helped the development of the areas around the coal mines. With better transportation facilities domestic trade grew by leaps and bounds, with more men participating in commercial transactions in the up-and-coming trade marts.

The growth of the internal market would have been stunted to a large extent if the standardisation of weights and measures had not been attempted in the seventies of the last century. Commercial speculation was virtually impossible in the prevalent diversity of weights and measures. Growth of the internal market is directly proportional to the flow of commercial capital. The result of the metrical confusion was that capital investment in trade was risky and uncertain. Naturally, commerce attracted less capital. Men with large capital were tempted to invest in land, as its return was sure and safe. The table on p. 62 will give an idea of the confusion resulting from the existence of diverse weights and measures.

Like weights, measures also varied greatly from place to place. Even different weights and measures were used in different types of transaction. Historical and local factors were at play behind the bewildering variety of the metrical system and it was extremely difficult to strike at its roots. Act XXXI of 1871 relating to weights and measures achieved only a limited success in standardising the metrical system. Market regulations and proper commercial taxation (tariff legislations) helped the growth of the internal market in Bengal.

<i>Place</i>	<i>Tolas per seer</i>	<i>Place</i>	<i>Tolas per seer</i>
Birbhum	58 $\frac{5}{8}$	Malda	100
Calcutta	80	—do—	50
Chandernagore	71.70	—do—	‘ 80
—do—	90	—do—	105
Chittagong	82 $\frac{5}{8}$	Nadia	82 $\frac{5}{8}$
Cossimbazar	76	Pabna	58
—do—	78	Rungpore	58
—do—	80	—do—	106
—do—	82.1	—do—	810
Dacca	60	—do—	460
—do—	70	Santipur	60.80
—do—	82	—do—	820
Hooghly	80	—do—	96
—do—	82	Sonamukhi	10.58
		—do—	75
		—do—	82.1

The objective conditions resulting from the economic measures of the British Indian government indicated an appreciable and steady growth of the internal market in Bengal in the latter half of the 19th century. If modernisation can be interpreted in terms of material progress coupled with the release of new forces in the society, Bengal received a heavy dose of it in various spheres of her economic life. The volume of the export and import trade of Bengal was an index of the growth of its internal market. "Notwithstanding years of occasional setback, there was, on the whole, an unmistakable record of growth from an annual average of 640.85 lakhs of rupees during the quinquennium which ended in 1834-35, the aggregate value of the total foreign trade of Bengal went up to Rs. 9,430.21 lakhs in the last quinquennium under review (1900-01 to 1904-95). In other words; within the space of about seventy years, the total value of Bengal's trade in

merchandise increased fourteen times.”¹¹ Simultaneously, coastal trade also increased considerably. It may be presumed that the quantum of inland trade had also increased, though the exact figures cannot be stated as there was no system of recording it properly.

The greatest direct impact of the growth of the internal market was the commercialisation of agriculture. Commercialisation of agriculture means that particular crops are produced for sale and not for local consumption. Commercialisation in its turn was the result of the penetration of the money economy into the villages which was facilitated by the organisation of markets. Gadgil aptly observed, “The cultivator today does not try to grow every kind of agricultural produce that he may require at home, as he had to do when the means of communication were deficient. He is more ready now to resort to the market for his requirements and also for his surplus produce. This market for agricultural produce of all kinds might indeed be said to have been non-existent before the middle of the last century.”¹² The pattern of this commercialisation of agriculture was patent in those crops which were grown largely for export out of the country. Hence, Bengal flourished in the growth and marketing of staple commodities like jute, tea, etc. in the second half of the 19th century. While the export of indigo was declining, that of jute, tea and tobacco was growing steadily. “In 1872 Kissen Mohun Mullick, reviewing the development of Bengal commerce, remarked that never in his recollection had Bengal trade in any description of goods flourished so well within a few years as jute.”¹³ The tables on p. 64 will indicate the growth of trade in jute and tea respectively.¹⁴

The growth of the market was also linked up with the growth of towns or urban centres. In the words of Maurice Dobb, “so far as the growth of the market exercised a disintegrating influence on the structure of Feudalism, and prepared the soil for the growth of forces which were to weaken and supplant it, the story of this influence can largely be

JUTE

<i>Year</i>	<i>Export Average of five years (Cwt)</i>
1852-53 to 1856-57	439,850
1857-58 to 1861-62	710,826
1862-63 to 1866-67	969,724
1867-68 to 1871-72	2,628,110
1872-73 to 1876-77	4,858,162
1877-78 to 1881-82	5,362,267
1882-83 to 1886-87	7,274,000
1887-88 to 1891-92	10,194,000
1892-93 to 1896-97	11,183,000
1897-98 to 1901-02	12,356,000

TEA

<i>Year</i>	<i>Value (Rs.)</i>
1851-52	198,945
1861-62	1,441,900
1871-72	14,362,138
1881-82	35,287,713
1891-92	56,331,095
1901-02	71,077,000

identified with the rise of towns as corporate bodies."¹⁵ With the extension of trade and commerce new centres of transaction slowly came up. Round the weekly and bi-weekly marts a few permanent shops first sprang up, and if it was a favourable site, it would ultimately develop into an urban area. In many cases the physical appearance of these trading centres could be misleading. Goalando, Sirajgunge, Kusthia, Katwa, Kalna and Bhadreswar provided examples of the above phenomenon. Ranigunge, Asansol and Burdwan developed into new centres of trade as a result of the development of the coal mining

industry. It is interesting to observe that Murshidabad, the old capital, was gradually going into oblivion.

Generally speaking, the growth of the internal market of Bengal corresponded to the crumbling of the village economy. The equilibrium of the old order was badly shaken. Perhaps, the penetration of merchant capital or rather the money economy was at the bottom of the 'disorder'. In the words of Karl Marx, "Money then appears as a disruptive power for the individual and for the social bonds, which claim to be self-subsistent entities."¹⁶ The traditional connotation of self-sufficient village community was on the threshold of disappearance. As Marx observed, "English commerce exerted a revolutionary influence on these communities and tore them apart only in so far as the low prices of its goods served to destroy the spinning and weaving industries, which were an ancient integrating element of this unity of industrial and agricultural production."¹⁷ It is interesting to observe that though commercialisation of agriculture brought changes in the pattern of production, capitalism in agriculture did not develop in Bengal. The break-up of the village economy did not witness the rise of indigenous capitalism in Bengal. Space will not permit a full-scale analysis of this process, but it would be sufficient to note that Bengal did not get the full benefits of the change in the economic pattern.

The social impact of the growth of the internal market and the crumbling of the village economy was indirect but interesting. Trevelyan, though not a Marxist, had a clear understanding of the dynamics of history when he wrote, "The social scene grows out of economic conditions, to much the same extent that the political events in their turn grow out of social conditions."¹⁸ Needless to say, economic factors lay at the bottom of the social change in Bengal during the period under review. With a change in the commercial life, Bengal witnessed a tendency towards better commercial organisations

and associations which played a part in the social life as well. Following the pattern of the British commercial organisations, some purely Indian organisations began to appear. So long land was the only attraction and a new landed middle class had already sprung up in Bengal in the mid-19th century who, with surplus money and energy, took a leading role in the social life of Bengal. The interest taken by the Indians in commerce again was indeed heartening. As against the Bengal Chamber of Commerce, the Bengal National Chamber of Commerce, Calcutta, was founded in 1887 as a custodian of Indian commercial interests. Such Chambers of Commerce were also founded in the subordinate ports. Thus, we find the Chittagong Chamber of Commerce, the Naraingunge Chamber of Commerce, the Upper India Chamber of Commerce, etc. Closely linked with the Chambers of Commerce there sprang up trades associations. It is interesting to observe that the Bengalee merchants made renewed efforts in the second half of the 19th century to secure a place in the commercial life of the province; but they faded away after an initial flash. The house of Ramdulal De flourished till 1868 under Ashutosh De. Ram Gopal Ghosh earned a distinction as a merchant and trained up some of the most skilful banians. Mention may be made of the firms of Pran Kissan Law, S. C. Chunder, Tarruck Chunder Sarkar (1873) and others. Unfortunately, however, these Bengalee merchants were gradually elbowed out by the Marwaris who established themselves firmly in Bengal towards the end of the last century. The establishment of the Marwari Association of Calcutta in 1898 and the Marwari Chamber of Commerce in 1900 practically signalled the fading out of Bengali commercial enterprise. However, together with a marked tendency towards urbanisation, there arose a powerful middle class in Bengal which has led the society since that time. With the growth of the internal market, as we have already analysed, rural towns came up as a sort of a link between the metropolitan city of Calcutta and villages. Simultaneously, a rural-

urban reciprocity was established and the flowering of a new cultural trend was clearly discernible. The essentially agrarian society of Bengal was feeling a new wind of change, and the gateway to a composite culture of Bengal was opened, giving a new vitality to the Bengali life.

NOTES AND REFERENCES

- This paper does not simply analyse a basically economic phenomenon of great importance in Bengal but also traces its social impact to a limited extent.
1. C. Trevelyan, *Report on the Inland Customs and Town Duties of the Bengal Presidency*, p. 4.
 2. D. Ibbetson, *Report on the Census of the Punjab*, 1881, p. 18.
 3. A full history of these barriers has been traced by the writer in his book *History of Internal Trade Barriers in British India, vol. I, Bengal Presidency, 1765-1836*, published by the Asiatic Society, Calcutta, in 1972.
 4. T. S. Banerjee, *Internal Market of India, 1834-1900*, Introduction.
 5. C. Trevelyan, *op. cit.*
 6. *Ibid.*, p. 102.
 7. C. J. Hamilton, *Trade Relations Between England and India*.
 8. *Selections from the Records of the Government of India* (P. W. Department), no. XIX.
 9. Bengal Judicial Proceedings, no. 10 of 9 August, 1848.
 10. *The Census of India, 1901*, vol. VI, part I, p. 11.
 11. N. K. Sinha (ed.), *The History of Bengal (1757-1905)*, p. 344.
 12. D. R. Gadgil, *The Industrial Evolution of India in Recent Times*, p. 153.
 13. N. K. Sinha (ed.), *op. cit.*, p. 356.
 14. *Ibid.*, pp. 357-58.
 15. M. Dobb, *Studies in the Development of Capitalism*, p. 70.
 16. Karl Marx, *Economic and Philosophical Manuscripts* (1844).
 17. Karl Marx, *Capital*, vol. III, chapter XX.
 18. Trevelyan, *English Social History*, Introduction.

THE TRANSFORMATION OF CASTE

DR. AMITABHA MUKHERJEE

(*Jadavpur University*)

THE term caste implied in the 19th-century Bengal, as in the rest of India, (i) a particular rank or status in the social hierarchy, (ii) a particular profession or occupation, and also (iii) compliance with certain rules of social conduct including rules of marriage and dining. The purpose of the present paper is to describe, in outline, the extent to which the rank and occupation assigned to the various castes and sub-castes were adhered to, and the rules of social conduct applicable to different castes followed in the Bengalee society in the beginning of the 19th century, and the extent to which these were all modified by the spread of western education and culture and by the impact of the new economic conditions and ways of living in the course of the century. The subject is indeed vast, and full justice cannot be done to it within the short compass of a seminar paper; we shall try here only to emphasize upon some of the important changes taking place in the caste structure and conventions of our society during the last century.

The Hindu society in Bengal has been traditionally divided into two major castes or *varnas*, namely, the Brahman and the Sudra. Below the Sudras there were the untouchables and the tribal people or *antyajas* and *mlechchhas*, but the Kshatriyas and Vaisyas, the two other major *varnas* of the ancient Indian society, have been almost non-existent (except in scattered groups) in this part of the country at least since the 12th-13th centuries A.D. The *Vrihaddharma Purana* and the *Brahmavaivarta Purana* which were written during this period (12th-13th centuries A.D.) and whose testimony regarding the

contemporary Bengalee society is taken as authoritative by most of our historians, are unanimous on this point. Even the Vaidyas (Ambasthas) and the Kayasthas (Karans) whose position was only next to the Brahmans in the caste hierarchy of Bengal at the end of the Middle Ages were included in the list of 'Sat Sudras' or 'Uttama Samkaras' by the two Puranas mentioned above.¹ Raghunandan, the famous Bengalee authority on the Hindu ritual laws of the 16th century, also treats the Vaidyas and the Kayasthas as part of the Sudra community (*varna*). The study of contemporary Bengali literature, however, leaves us in no doubt that by the 16th century the Vaidyas and the Kayasthas had created a new stratum in the caste hierarchy of Bengal, and though still regarded as Sudras, they ranked above the trading and artisan castes which comprised the great majority of the Sudra *varna*.² At the time of the establishment of British rule in Bengal the Bengalee Sudras were divided into three broad categories, namely, clean, unclean, and untouchable. The clean Sudras included the Vaidyas, the Kayasthas and the Navasakhas or nine trading and artisan castes, viz. Gope, Mali, Tambuli, Tanti, Sankhari, Kansari, Kumbhakar, Karmakar and Napit. An ordinary Brahman could act as a priest to any of these nine *upa-varnas* or *jatis* ('castes' in the modern usage) and could also accept drinking water from them without degrading himself. That is why the Navasakhas are also described as *Jal-chal* or *Jalacharaniya* castes.³ Of course, many other trading and artisan castes were aspirants for the Navasakha status and by the middle of the 19th century the Tilis, the Baruis or Barujivis, the Gandhabaniks and the Moiras or Modaks also came to be included in the list of clean Sudras.⁴ Below the latter in the caste hierarchy were the unclean Sudras, such as the Kaivartas, the Mahishyas, the Suvarnabaniks, the Sahas, the Sunris, the Telis, the Kulus, the Dhobas and so on. Degraded Brahmans or Varna Brahmans alone could act as priests to these unclean Sudra castes, water at whose hands was not acceptable to the higher orders of the society.⁵ At the bottom of the social

ladder were the Yugis, the Chandals or Namasudras, the Chamars and Muchis, the Haris and Domes and so on. Very few of these castes, if any, were homogeneous social groups; each one of them, not excluding the topmost castes, was divided into several endogamous sub-castes, known as *Sreni* or *Samaj*. As Professor N. K. Bose has observed, "there was intense social stratification, the different strata being marked off from one another by ritual labels."⁶

The ritual status of the different castes was determined theoretically by the nature of their occupation or profession. Certain occupations or professions were traditionally regarded as superior to or more sacred than others, and those who were engaged in these occupations hereditarily were given a higher status in the social hierarchy than those who were engaged in inferior or less sacred vocations. This functional character of the caste system is quite obvious, and Professor N. K. Bose has rightly observed that "one of the prime movers in the caste system was the design of building up a non-competitive productive organization" in our country. Caste provided some sort of a guarantee of occupation to every individual member of the society, and that is why it managed to survive the political upheavals of centuries, and, during the mediaeval period, drew even the Muslims into its structure.⁷ At the same time, however, it should be pointed out that caste did not act as a very great impediment to occupational mobility, so far at least as the higher castes were concerned, and to a much lesser extent even among the lower ones. Manu, the great Hindu law-giver of ancient times (c. 200 B.C.-200 A.D.), permitted the Brahman to adopt the occupation of the Kshatriya or the Vaisya if he failed to earn his livelihood by pursuing his own occupation.⁸ Dr. Nihar Ranjan Roy has shown that even in the ancient times, between the 8th and the 13th centuries A.D., numerous instances are on record of Brahmins acting as administrators, generals and farmers, of Vaidyas serving as royal counsellors, of Kayasthas or Karans engaging themselves in the martial and medical professions, and of

Dasas or agriculturists working as government servants and even as court-poets. The great majority of the Indian people are, however, believed to have been engaged in that age in the vocations assigned to their respective castes.⁹ In the medieval period also this occupational mobility was clearly noticeable among the higher castes—Brahmans, Vaidyas and Kayasthas. The occupation of the priest was no doubt a monopoly of the Brahmans, and this gave them a position of special veneration in the society, but they did not have a monopoly of learning. Many of the Brahmans were actually poor and illiterate.¹⁰ The Vaidyas shared the knowledge of Sanskrit language and literature with the Brahmans¹¹ though the great majority of them probably remained true to their caste profession, that of medicine. The Kayasthas were generally clerks and accountants (many in government service), but some of them became administrators and big landlords enjoying a large degree of political power. According to Abul Fazl, the majority of the Bengalee zemindars in the 16th century were Kayasthas.¹² Their ritual status might have been lower but their social eminence could not have been less than that of the Brahmans. Many people belonging to the trading castes like Suvarnabanik, Gandhabanik, etc. not only became rich through trade, but also showed their love of learning during the Middle Ages. Some of them even acquired reputation as writers in this period. In the 18th century we come across the names of Majhi Kayet, Ramnarayan Gope, Bhagyamanta Dhupi and other people belonging to the lower castes as writers of Bengali manuscripts. Madhusudan Napit narrated the story of Nala and Damayanti in Bengali verse in 1809. Education was clearly not a monopoly of the three upper castes—Brahman, Vaidya and Kayastha—at the end of the Muslim rule in Bengal.¹³ The teaching profession was consequently invaded by many non-Brahman castes. Sanskritic education in the *tuls* was still largely monopolised by the Brahmans, but the majority of the teachers in the vernacular schools or *pathsalas* were Kayasthas, as Adam noted in the

thirties of the last century. In spite of the strict observance of caste distinctions in rural society, Adam reported the existence of a large number of *pathsalas* in the Murshidabad and Birbhum districts which were run by teachers belonging to such low castes as Kolu, Sunri, Dhoba, Mala, Chandal, and so on, and, what is more surprising, these teachers had among their pupils even boys belonging to the higher castes.¹⁴ The Brahmins, on the other hand, were to be found in the 18th century in various professions other than those of the teacher and the priest. Many Brahmins acquired large zemindaris in the period, and many others served as managers of zemindaris belonging to other castes. They could obtain land leases on better terms and were exempted from various impositions and extortions to which the inferior classes were exposed. Along with the Vaidyas and the Kayasthas they were also to be found in important administrative posts.¹⁵ Dr. N. K. Sinha has shown that during the period from 1757 to 1785 the principal businessmen in Calcutta were mostly higher caste Hindus though at the beginning of the 19th century these people withdrew from commerce and invested their money in land.^{16a} This occupational mobility went so far at the end of the 18th century that Colebrooke noted in 1795 that every profession with few exceptions was open to every description of persons, and that the hereditary profession of a caste was entitled merely to a preference.¹⁶ Hamilton, writing in 1828, also observed that in practice "little attention is paid to the limitation of castes, daily observation showing Brahmins exercising the martial profession of a Khetri, and even the menial one of a Sudra...."¹⁷ The working of British commercial capitalism and the spread of western education and culture naturally accelerated this process, but it had certainly started long before the establishment of British political power in Bengal.

It is true that this occupational mobility was much more marked among the higher castes than among the lower. H. E. A. Cotton deplored in the beginning of the present century

that "the lower castes have not emancipated themselves as completely as the higher" from their traditional caste avocations.¹⁸ Still, occupational mobility was not completely absent even among the lower orders. Dr. R. C. Majumdar has shown that in medieval Bengal the lower castes were not completely deprived of the benefits of education, and that they even started new religious movements and founded new heterodox sects outside the pale of orthodox Hinduism.¹⁹ Among the Gaudiya Vaishnavas (the followers of Chaitanya) many non-Brahmans acted as religious preceptors to Brahmins.²⁰ The functions of the Kshatriya or the martial caste were discharged in Bengal by members of some of the lowest castes like the Goalas, Bagdis, Hari, and Dome. The Aguris or Ugrakshatriyas of the Burdwan district were drawn equally to the agricultural and the martial professions.²¹ In a recently published article in the *Journal of Asian Studies* (February, 1971) Mr. H. R. Sanyal has drawn our attention to certain changes in the occupation of the trading and artisan castes of Bengal during the Middle Ages. In the 12th-13th centuries, according to the testimony of the Puranas, the Tailikas used to trade in betel-nuts. But, if Mukundaram is to be believed, this profession was taken up in the 16th century by the Tambulis who combined it with their traditional occupation of selling betel-leaves. A new caste, Kolus, not mentioned in the Puranas, was trying to penetrate into the traditional occupation of the Telis. The Gopes were originally a pastoral caste, but by the time of Mukundaram (c. 1579 A.D.) a section of these people (Banik Gope) had switched over to agricultural pursuits and trade in cash and food crops. In the second half of the 18th century or the first decade of the 19th, these Banik Gopes *probably* took the title of Sadgope.²² Still later, at least in some districts of Bengal they turned to trade and began to consider it degrading to touch a plough.²³ Mr. Sanyal has also shown in the article referred to above that a section of the Telis similarly gave up their hereditary profession in the 18th century, engaged themselves in trade and cultivation, and later became money-lenders, bankers and

landlords. They came to form a separate sub-caste, Tili, and claimed for themselves a higher social status than the rest of the community.²⁴ Many Suvarnabaniks turned into banyans, mutsuddis and bankers in the latter half of the 18th century. Some of the Telis took to weaving after the establishment of British rule in Bengal. The Namasudras or Chandals became largely an agricultural caste probably in the 18th century, if not earlier, and so became a section of the Kaivartas.²⁵

The nineteenth century saw a radical change in the occupational pattern of many of the trading and artisan castes. Though higher or English education was dominated by the three upper castes—Brahman, Vaidya and Kayastha—even at the end of the 19th century, the census figures of 1891 reveal that it was slowly percolating among the lower castes too. The Report of the D.P.I., Bengal, for the year 1883-84 shows that 84.7 per cent of the college-going students in Bengal came from the three higher castes—Brahman, Vaidya and Kayastha, 9.3 per cent of them came from the Navasakha castes and 6 per cent from other trading and artisan castes. Of the high-school-going students in Bengal in 1883-84, 73.4 per cent came from the three topmost castes, 14.2 per cent from the Navasakha castes and 11.6 per cent from other trading and artisan castes. This state of affairs prevailed at least up to the eighties of the 19th century.²⁶ Anyway, as literacy and learning began to spread and new avenues of employment began to open up before them, many members of these trading and professional castes resorted to occupations other than their ancestral ones. The census figures of 1901 reveal that while 75.16 per cent of the Kumars (pottery-makers) and 70.13 per cent of the Bagdis (agriculturists and fishermen) of Bengal were still in their traditional occupations at the end of the 19th century, only 47.35 per cent of the Karmakars, 41.45 per cent of the Goalas and 23.26 per cent of the Chamars and Muchis preferred their traditional callings to new occupations.²⁷ Writing about Calcutta in 1907, Mr. H. E. A. Cotton pointed out that while the great

majority of the Dhobas (nearly three-fourths) were still washing clothes, the Malo was still generally a boatman like his ancestor, and the Hari and the Dome still employed principally in the scavenging occupations of their caste, the Kaivartas, the Tantis (weavers) and the Telis had very largely given up their hereditary professions, Sadgopes were to be found in professional chairs and Sunris or wine-sellers in the postal and telegraph departments.²⁸ In subsequent years artisan castes of Bengal like Kamar, Kumar, Chamar and Muchi have drifted either towards agricultural labour or skilled labour in industries other than their traditional ones, while castes like Bagdi whose traditional occupation was labour in the fields have maintained it to an appreciable extent.²⁹ The decline of the caste-based system of production would have been much more rapid in our country, as Professor N. K. Bose points out, had our modern industries and urban occupations expanded fast enough to meet the demands of all rural people who wanted to improve their economic conditions through a change of profession. Among the three higher castes—Brahman, Vaidya and Kayastha, the departure from traditional occupations in the 19th century has naturally been very high. Only 36.10 per cent of the Bengalee Vaidyas and 33.54 per cent of the Bengalee Brahmans were still engaged in their traditional occupations at the end of the 19th century. The percentage of literacy among these three higher castes was much higher in comparison with the country's average, and they concentrated in higher professions like medicine, law, secretarial work, land-owning or land-management.³⁰ The 1881 census revealed that a large number of small private industrial concerns were owned by Bengalee Brahmans and Kayasthas. Some of the latter also turned to large-scale industry and mining, but they generally met with failure.³¹

As occupational mobility increased more and more in the 19th century, attempts were made by various castes and sub-castes to achieve a better position for themselves in the social hierarchy. The caste structure in Bengal was probably much

less rigid than in many other parts of India even in the pre-British period. The Brahmans, though enjoying a very high ritual status, had to share social and economic power with the Vaidyas and the Kayasthas. As early as the mid-18th century a section of the Vaidyas under the leadership of Raja Rajballabh of Dacca started wearing the sacred thread and declared themselves to be *dwijas* (twice-born) or equal in ritual status with the Brahmans.³² In the twenties of the 19th century there was a regular pamphlet war between the Brahman and Vaidya pundits of Calcutta over the ritual status of the Vaidyas. A Vaidya Samaj was also formed in 1831 under the leadership of Khudiram Bisharad, a teacher of medicine in the Calcutta Sanskrit College, to defend the caste privileges of the Vaidyas, particularly those in the medical profession, and influential men like Ram Kamal Sen gave it their powerful support.³³ Like the Vaidyas, the Kayasthas too soon claimed the status of *dwija*, and tried to trace their descent from the Kshatriyas of antiquity. Between these two communities, again, there was a long-standing quarrel as to precedence, though the Brahmans looked upon both of them as Sudras.³⁴ In 1832 the Dharma Sabha called a special meeting in Calcutta to discuss the question whether a Sudra, if he was a Vaishnava, could claim reverence from the Brahman.³⁵ Risley, writing in 1891, refers to several new sub-castes—the Halik Kaivartas, the Sahas and the Tilos—trying to break away from their parent castes—the Kaivartas, the Sunris and the Telis, to achieve a higher rank in the caste hierarchy than the existing one. The Halik Kaivartas who gave up their ancestral profession of fishing and took to cultivation had been trying since the 18th century to dissociate themselves from the Jalik Kaivartas who remained true to their hereditary profession, by adopting Brahmanical rules of life and new caste-names.³⁶ Ultimately, during the 1901 census, they forcefully advanced their claim of being accepted as Mahishyas.³⁷ Mr. H. R. Sanyal has made a special case study of two sub-castes, the Sadgopes and the Tilos, both of whom

climbed up to the Navasakha status in the caste hierarchy in the course of the 19th century. As Mr. N. K. Dutta has pointed out, in the traditional list of Navasakhas the word Gope is clearly mentioned, but in the 19th century it came to be interpreted as Sadgope, the other Gopes being branded as unclean Sudras.³⁸ Similarly, the Tiris who had grown rich through trade, banking and landownership claimed for themselves a higher status than the Telis, their poorer caste-fellows. At the request of Krishna Kanta Nandi (death—c. 1793 A.D.), the founder of the Kasimbazar Raj family and a favourite of Warren Hastings, the pundits of Navadwip gave the ruling that the trading Telis were good Sudras of the Navasakha order.³⁹ The Namasudras who formed a very large community in East Bengal were treated by the upper castes as Chandals or untouchables. In 1873 the Chandals of Faridpur declared a general strike in the district, resolving not to serve any one of the upper castes in whatever capacity unless they were given a better position in the Hindu caste hierarchy. But, ultimately, the agitation subsided and the Chandals resumed their services to other castes.⁴⁰ Early in the 20th century some of the Namasudras claimed recognition as Brahman and assumed the new caste-name of Namobrahman.⁴¹ In 1877-78 some forty members of the Yugi or weaver caste put on the sacred thread on the ground that they were really descended from Yogis (ascetics). This movement of upgrading the Yugis to the status of Brahman gained ground in the first three decades of the present century (reaching its high watermark in 1921), but the higher castes refused to concede to them a higher status than what they enjoyed before.⁴² Even the Napits or barbers claimed for themselves a Brahmanical status in the early decades of the present century, and assumed the caste-name of Nai-Brahman. But this claim was not taken seriously by the majority of the Hindu society. A section of the Dhobas took to agriculture and called themselves Chasha-Dhobas, claiming a status superior to that of the rest of the community.⁴³

The movements referred to above clearly indicate that even at the end of the 19th century caste was very important in the rural society of Bengal as a symbol of social status. In the urban society centred round Calcutta, however, caste was gradually losing its importance even as a status symbol in the second half of the 19th century. In the 18th century, as H. J. Rainey has pointed out in his *A Historical And Topographical Sketch of Calcutta*, all the working classes—weavers, carpenters, smiths, tailors, braziers, etc., were required to be incorporated in their respective caste bodies, one in each district of the town. This was substantially the same plan as that pursued in the old village communities in India.⁴⁴ There was also a caste tribunal or *Jatimala-Kachari* in Calcutta, analogous to the village *panchayat* and it was presided over by a Hindu appointed by the English Governor. Maharaja Nabakrishna was a judge of this tribunal for several years.⁴⁵ But in the early decades of the 19th century, Calcutta was “being rapidly transformed from a caste-based, relatively closed society to a relatively open and competitive one” by the forces of economic changes. Writing in 1820, Ward observes, “Thousands of Hindoos daily violate the rules of the cast [sic] in secret, and disavow it before their friends.”⁴⁶ Ward was a Christian missionary, but Bhabani Charan Bandyopadhyay, who was the Secretary of the Dharma Sabha and a leader of the orthodox section of the Hindu community of Calcutta, also makes the same complaint in his social sketch, the *Kalikata Kamalalaya*, published in 1823.⁴⁷ Babu Ramdulal De, a self-made man and a millionaire, used to boast that the caste was in his iron chest, meaning thereby that money had the power of restoring caste, in case it was lost for some impious act.⁴⁸ Needless to say, it was the freedom of urban life which enabled these people to disregard the traditional restrictions of caste. The students of Derozio (1809-31) in the Hindu College also openly ignored caste taboos in the matter of food and drink, indulging often in beef and wine, and their unconventional acts shocked the orthodox society of Calcutta so much that Derozio soon lost

his job in the Hindu College.⁴⁹ The Brahma Samaj movement under the leadership of Keshab Chandra Sen, Vijay Krishna Goswami and Sivanath Sastri put great emphasis on the removal of caste prejudices and popularising of inter-caste marriages in the second half of the 19th century.⁵⁰ An ideal teacher and social reformer like Ramtanu Lahiri (1813-98), who was not an initiated Brahma, openly revolted against the caste system in 1856 by tearing off his sacred thread and thus giving up his claim to Brahmanhood, and suffered much social persecution on this account.⁵¹ Swami Vivekananda, the great leader of Neo-Hinduism at the end of the 19th century, also raised his powerful voice of protest against stupid caste prejudices and caste taboos and violated many of these in his own life.⁵²

Some of the anti-caste legislations of the Government enacted during the second half of the 19th century, like the Castes Disabilities Removal Act of 1850, the Widow Marriage Act of 1856, the Special Marriage Act of 1872 and the Age of Consent Act of 1891, also gave a rude shock to age-old caste practices of the orthodox Hindus. The first of these legislations decreed that no person would forfeit his ordinary rights of property by loss of caste or change of religion, notwithstanding any caste-custom to the contrary. The Widow Marriage Act legalised the marriage of Hindu widows, a practice which had long been interdicted by the Hindu *shastras* and completely eschewed by all castes which had any claim of respectability in the society. The Act III of 1872 made it possible for any Indian of whatever caste or creed to enter into a valid marriage with a person belonging to any caste or creed, provided the parties registered the contract of marriage and declared *inter alia* that they did not belong to any religion. This Act was demanded by the progressive Brahmans (particularly those belonging to Keshab Sen's group) to legalise the various inter-caste marriages taking place within their community, though the clause requiring the solemn renunciation of religion by parties to a civil marriage was considered a great moral dilemma by

many progressive people of the country including some leaders of the Adi Brahma Samaj. (This part of the Act was amended later in 1923.) The Age of Consent Act of 1891 which was designed to combat to some extent the evils of child marriage in the Hindu society also shocked the orthodox Hindus. The establishment of British courts, administering a uniform criminal law, removed from the purview of caste *panchayats* matters that previously used to be adjudicated by them. The caste *panchayats* in the villages consequently lost much of their former importance. Even in matters of civil law, such as marriage, separation, etc., various decisions of the High Courts practically set aside the authority of caste.⁵³ In Calcutta the caste councils were replaced by multi-caste *dals* at the beginning of the 19th century. In many of these *dals* rich Kayasthas of Calcutta took the leadership and the Brahmins did not hesitate to follow them.

But much more effective than these Government legislations in the matter of fighting caste prejudices were the changes brought about by urbanisation, changes which may be aptly described as a silent revolution in society. The growth of city life with its migratory population gave rise to hotels and restaurants. The exigencies of office work forced the city people to put aside their old ideas of ritual purity. Even in the so-called Hindu hotels people belonging to different castes had often to take their meals together, as the hotel-keeper could not afford to reserve separate dining halls and separate kitchens for members of different castes.⁵⁴ In the new schools and colleges students belonging to different castes, clean and unclean, studied together and played together, and this free mixing naturally left a deep impression upon their minds. In the Medical College of Calcutta, founded in 1835, caste Hindu students had to dissect dead bodies ignoring the fear of pollution. In the Sanskrit College of Calcutta, where the sacred books of the Hindus were studied, Vidyasagar permitted the admission of the Kayasthas, a Sudra caste, in 1854. In 1863 students of all castes were permitted to enter this College by

the orders of the Director of Public Instruction. As in the school-room, so in the railway compartment and on board the steamer caste rules could not be rigorously observed. Orthodox Hindus residing in Calcutta had shortly to set aside their prejudices about drinking of tap water and soda water, using of soap (containing fat) and taking of European-made medicines and mill-made refined sugar.⁵⁵ In the late 19th century the superstition against sea voyage was also relaxed to a great extent though Surendranath Banerjea's family had been excommunicated by their caste-people for his undertaking a sea-voyage in the seventies of the 19th century.⁵⁶ The freedom from caste restrictions about food and drink did not, of course, for a long time obtain in the villages, and rural society remained rather conservative even at the end of the century. But Bepin Chandra Pal tells us in his autobiography how even in a remote mofussil area of Sylhet these prejudices were slowly breaking down in the second half of the 19th century.⁵⁷ Only in the matter of inter-caste marriage the 19th century did not witness any great change, and there were even Brahmans and Indian Christians who looked upon inter-caste marriage with disfavour.⁵⁸ Writing in 1891, Risley considered caste to be a matter mainly relating to marriage.⁵⁹ The incidence of Kulin polygamy was, however, greatly reduced by the end of the century, though it did not become completely extinct even in the early decades of the present century.⁶⁰ All told, the 19th century witnessed a remarkable transformation of caste in many respects, at least in the urban society of Bengal.

NOTES AND REFERENCES

1. N. R. Ray, *Bangalee Hindur Varnabhed* (Calcutta, 1352 B. S.), pp. 42-43.
2. H. R. Sanyal, 'Continuities of Social Mobility in Traditional and Modern Society in India etc.' in *The Journal of Asian Studies*, Feb., 1971, p. 319.
3. N. K. Dutt, *Origin and Growth of Castes in India*, vol. II (Castes in Bengal), (Calcutta, 1965), p. 114.
4. *Ibid.*, p. 114. Also, J. N. Bhattacharya, *Hindu Castes and Sects* (Calcutta, 1968; originally published in 1896), pp. 179-80.
5. J. N. Bhattacharya, *op. cit.*, p. 99.
6. Prof. N. K. Bose's Inaugural Address in M. K. Chaudhuri (ed.), *Trends of Socio-Economic Change in India, 1871-1961* (Simla, 1969), p. 8.
7. *Ibid.*, p. 8.
8. Manu, chapter IX, verse 319; chapter X, verses 80-82, 101-102.
9. N. R. Ray, *op. cit.*, pp. 87-88.
10. Mukundaram Chakrabarti, *Kavikankan Chandi* (Calcutta University Edition, 1952), p. 349. Vrindavan Das, *Chaitanya Bhagavat* (Basumati Edition), p. 48.
11. Krishnadas Kabiraj, *Chaitanya Charitamrita*, edited by U. N. Mukherjee (Calcutta, 1351 B. S.), p. 195. Vrindavan Das, *Chaitanya Bhagavat*, p. 48.
12. Abul Fazl, *Ain-i-Akbari*, translated by H. S. Jarrett (Sir Jadunath Sarkar's Edition, Calcutta, 1949), vol. II, p. 147.
13. R. C. Majumdar, *Bangla Deser Itihas—Madhya Yug* (Calcutta, 1373 B. S.), pp. 305-6.
14. The Rev. J. Long (ed.), *Adam's Reports on Vernacular Education in Bengal and Bihar* (Calcutta, 1868), pp. 158-59, 164, 176.
15. Edmund Leach and S. N. Mukherjee (eds.), *Elites in South Asia* (Cambridge, 1970), S. N. Mukherjee's article on 'Class, Caste and Politics in Calcutta, 1815-1838', p. 55.
- 15a. N. K. Sinha, *The Economic History of Bengal*, vol. II (Calcutta, 1962), p. 225.
16. H. T. Colebrooke, *Remarks on the Present State of Husbandry and Internal Commerce of Bengal* (London, 1795), p. 133.
17. W. Hamilton, *The East India Gazetteer* (London, 1828), vol. I, p. 208.
18. H. E. A. Cotton, *Calcutta Old and New* (Calcutta, 1907), p. 248.
19. R. C. Majumdar, *op. cit.*, p. 305.
20. K. M. Sen, *Jati-bhed* (Visvabharati, 1353 B. S.), p. 142.
21. R. C. Majumdar, *op. cit.*, pp. 302, 305; S. K. Ghosh, *Bangali Jati Parichaya* (Calcutta, 1363 B. S.), pp. 88-91; Sukumar Sen, *Madhya Tuber Bangla O Bangali* (Visvabharati, 1962), p. 93.
22. H. R. Sanyal, *op. cit.*, pp. 319, 321-22.
23. Anil Seal, *The Emergence of Indian Nationalism* (Cambridge, 1968), p. 44 f.n., quoting Hunter's *Statistical Account of Bengal*, vol. I, p. 62, vol. II, pp. 1, 287 and vol. IV, p. 51.
24. H. R. Sanyal, *op. cit.*, pp. 326-27.
25. S. K. Ghosh, *Bangali Jati Parichaya*, pp. 50, 58, and 138-39; R. Carttair, *Human Nature in Rural India* (London, 1895), p. 57.
26. Anil Seal, *op. cit.*, pp. 61-62.

27. These census figures have been taken from N. K. Bose's *Modern Bengal* (Berkeley, 1959), pp. 18-19.
28. H. E. A. Cotton, *op. cit.*, p. 248.
29. N. K. Bose, *op. cit.*, p. 20.
30. *Ibid.*, pp. 20-21.
31. M. K. Chaudhuri (ed.), *op. cit.*, pp. 319-20, 481.
32. J. N. Bhattacharya, *op. cit.*, p. 127.
33. A. C. Dasgupta (ed.), *Selections From Calcutta Gazette, 1824-32* (Calcutta, 1959), p. 654; Edmund Leach and S. N. Mukherjee (eds.), *op. cit.*, p. 59.
34. B. C. Pal, *Memories of My Life and Times*, vol. I (Calcutta, 1932), p. 17; U. G. Dasasharma, *Jati-tattva-baridhi* (Calcutta, 1818 Vaidyabda), Introduction, p. 8; N. K. Dutt, *op. cit.*, p. 47; M. N. Ghosh Sharma, *Kayastha Pradip* (Bagerhat, 1321 B. S.), p. 36; Anil Seal, *op. cit.*, p. 41.
35. S. N. Mukherjee, 'Class, Caste and Politics in Calcutta, 1815-1838' in Leach and Mukherjee (eds.), *op. cit.*, p. 59.
36. H. H. Risley, *Tribes and Castes of Bengal* (Calcutta, 1891), vol. I, pp. 375-82, vol. II, pp. 276, 307; N. K. Dutt, *op. cit.*, pp. 131-35.
37. H. R. Sanyal, *op. cit.*, p. 320.
38. N. K. Dutt, *op. cit.*, p. 129.
39. *Ibid.*, pp. 127-28.
40. W. W. Hunter, *The Statistical Account of Bengal*, vol. V, p. 285, quoted in A. Seal, *op. cit.*, p. 45.
41. N. K. Dutt, *op. cit.*, p. 148.
42. N. K. Basu, *Hindu Samajer Garhan* (Calcutta, 1356 B. S.), pp. 135-39; P. Sinha, *Nineteenth Century Bengal* (Calcutta, 1965), p. 8.
43. N. K. Dutt, *op. cit.*, pp. 129-30.
44. H. J. Rainey, *A Historical and Topographical Sketch of Calcutta* (Calcutta, 1876), p. 54.
45. Firminger's *Fifth Report on East India Affairs*, vol. I (Calcutta, 1917), p. lxxii; H. Verelst, *View of the Rise, Progress and Present State of the Government in Bengal* (London, 1772), pp. 27-28; N. N. Ghose, *Memoirs of Maharaja Nubkissen Bahadur* (Calcutta, 1901), p. 171.
46. W. Ward, *A View of the History, Literature and Mythology of the Hindoos*, vol. III (London, 1820), p. 183.
47. B. C. Bandyopadhyay, *Kalikata Kamalalaya* (1936 edition), pp. 10-11.
48. Rajnarayan Bose, *Sekal Ar Ekal* (Calcutta, 1363 B. S. First published in 1874), pp. 34-35; S. C. Bose, *The Hindoos As They Are* (Calcutta, 1881), pp. 176-77.
49. *Ibid.*, p. 32-33. *Hindu Athava Presidency Colleger Itivritta* by the same author, first published in 1875 (Calcutta, 1363 B. S.), pp. 15-17.
50. S. N. Sastri, *History of the Brhamo Samaj*, 2 vols. (Calcutta, 1911-12), vol. I, pp. 141, 148, 152-53, 163-70, 216.
51. *Ibid.*, vol. II, p. 225.
52. Swami Vivekanander *Bani O Rachana* (Calcutta, 1369 B. S.), vol. IX, pp. 77-78, 224, 409-10, 420.
53. Bhudeb Mukhopadhyay, *Samajik Prabandha* (1892), included in P. N. Bishi

- (ed.), *Bhudeb-Rachana-Sambhar* (Calcutta, 1964 B. S.), p. 192; G. S. Ghurye, *Caste and Class in India* (Bombay, 1957), pp. 184-89.
54. *Ibid.*, p. 208.
 55. P. N. Bose, *A History of Hindu Civilization During British Rule in India*, vol. II, (Calcutta, 1894), pp. 30-33; S. P. Niyogi, 'Vidyasagarer Aprakasita Patravali' in the *Samakalin*, Falgun, 1377 B. S., pp. 552-60; L. S. S. O'Malley, *Indian Caste Customs* (Cambridge, 1932), pp. 118-20.
 56. P. N. Bose, *op. cit.*, p. 105; S. N. Banerjea, *A Nation in Making* (Calcutta, 1925), pp. 25-26.
 57. B. C. Pal, *Sattar Batsar, Atmajivani* (Calcutta, 1962), pp. 80-85, 121, 162-65.
In Pal's boyhood days a Navadwip 'goswami' who occasionally came to live with Pal's family in Sylhet used to take wild boar's flesh secretly and Pal's mother herself used to cook it for him.
 58. P. N. Bose, *op. cit.*, p. 95.
 59. H. H. Risley, *Tribes And Castes of Bengal*, quoted in J. N. Bhattacharya, *op. cit.*, p. 8.
 60. L. S. S. O'Malley, *Indian Caste Customs* (Cambridge, 1932), p. 10. O'Malley mentions the case of a Kulin Brahman in Bengal who as late as 1911 had 60 wives.

THE INDIGENOUS *versus* WESTERN MEDICAL SCIENCE: A SEARCH FOR PROGRESS

DR. NARENDRA NATH QANUNGO

(*Visva-Bharati University*)

WITH the revivifying touch of the new learning and the rational, progressive spirit of the West came the Great Awakening in nineteenth-century Bengal from the dogmatic slumber of centuries. From the same intellectual watershed two divergent streams descended—there was an essential spur to progress and receive the best from the West, and there was also a passionate yearning to conserve the best in our cultural heritage and base our social structure on the foundation of a spirit essentially Indian. Dvijendranath Tagore touched on the disturbed spirit of the Renascent Bengal with this apt remark [*in English rendering*]: “A baffling problem before the ‘Young Bengal’ was that Progress (*gati*: lit. ‘motion’) should not shatter Order (*sthiti*: *status quo*); Order should not block Progress; and yet by some *via media*, the Bengali Society should be guided into Progress.”¹ The philosophers of the enlightenment were torn between two calls—the sophisticated attraction and the living ferment of ideas of the West, and the traditional but less flashy wisdom of the sub-continent. On the whole, the new mood was not frustrating but stimulating.

As for the state of things with regard to indigenous systems of medicine and cure, a student of history may not fail to be impressed by the fact that in spite of all progress in civilisation and the science of cure, the spirit of the nineteenth-century Bengal lives vigorously in the countryside today and perhaps will live in the Bengal of the next century.

Generally speaking, the common run of the Hindus in the countryside believed in *abadhautika*, i.e. esoteric methods of

treatment (Bengali: *tuk tak*: incantation for recovery).² William Adam, appointed by Lord William Cavendish-Bentinck, Governor-General of India, to study the indigenous system of education in Bengal writes as early as 1836: "They (general practitioners) have not the least semblance of medical knowledge and they, in general, limit their prescriptions to the simplest vegetable preparations either preceded or followed by the pronouncing of an incantation and by striking or blowing upon the body."³

A standard Bengali work on medicine came out in print in 1886 (1292 B.S.). Ambikacharan Gupta's *Chikitsakalpalatika*—a book of 600 pages and priced at 12 annas only—contained *Abadhautika* (esoteric), *Totka* (quackery), *Baidyak* (Ayurvedic), *Hakimi*, Homeopathic and Allopathic methods of treatment. Rajnarayan Basu (1826-99) has referred to even Hydropathy, i.e. the treatment of disease by water⁴ and Psychopathy⁵ or Psychotherapy—the treatment of nervous and mental disorders by psychological methods.⁶

Contemporary evidence regarding the physicians' feats of cure is extremely scanty. Rajnarayan Basu in his *Atmacharit* tells us [*in English rendering*]: "To bring down temperature in fever the physician, known as *Kabiraj* or *Baidya*,⁷ started with purgative."⁸ He also prescribed *langhan* (fasting), before administering *batika* (pills).⁹ When the pills failed, the last resort was a process of steaming out the fever, known as *Bhapra* (vapour or steam-bath).¹⁰ If this too failed, the wizard-master of *Dainis* (evil spirits) was the forlorn hope. Dewan Kartickeyachandra Roy—better known as the father of the eminent poet and dramatist, D. L. Roy (b. 1863)—in his *Atmajivancharit* refers to *Dainir Ojha*¹¹ (also called *Bhuter Roja*), i.e. exorcist. The use of *jonk* (leech) as a cure for headache was also known.¹² For constipation *haritakibatika*¹³—tablets of myrobalan fruit—was recommended by the *Kabiraj*. Similarly the indigenous system of medicine recommended *Thorir ras* (Sans. *Kadalikandaha*, i.e. juice of the spathe of a plantain tree before it shoots from the stem) and *Kalmir jhol* (Sans. *Kalambi*:

an aquatic plant, its soup), for indigestion,¹⁴ and *Kushmanda-khanda*¹⁵ (a confection of gourd) for *Rakta-pitta* (Haematemesis). The proved treatment for wounds was a preparation from the leaves of *Kalya-lata*¹⁶ (a wild creeper, also called *Goale lata*).

The indigenous system of medicine was a failure with several virulent diseases, cholera, known as *Ola-utha*, being one of them.¹⁷ Well-known scholars like Ramnath Vidyavachaspati, the first *Pandit* of Fort William College, Calcutta, William Ward, the Baptist Missionary of Serampore, and Kirtichandra Nyayaratna of Sanskrit College, Calcutta, among others, died of cholera. The cholera patient was denied water, and even in high fever the *Kabiraj* forbade water. Dewan Kartikeyachandra Roy tells us how a *Pandit* of Navadvip (Nadia) grew desperate with thirst under the *Kabiraj*'s treatment for high fever, and under the pretence to respond to a call of nature went out and drank water from a dirty pot.¹⁸ Smallpox, known as *Basanta-rog*,¹⁹ which made great havocs at times,²⁰ was left alone by the *Kabiraj* to the mercy of the much-dreaded goddess *Shitala*.²¹ The *Kabiraj* was, however, an interesting character and not altogether useless. He would tell the time of the *Ganga-yatra*.²² The dying man's body was kept half-immersed in the sacred river; the attendants would cry *Hari-bol* ("Take the name of Hari"), and pour the Ganges water at intervals into his mouth,²³ till he actually expired even after a week! The contemporary newspaper *Sambad Bhaskar* gives in an obituary notice the details of the death of Maharajadhiraj Ramakrishna Roy Bahadur.²⁴

The barbers engaged themselves in a sort of crude surgery. Shibley Shastri (b. 1847) refers to the *nāpit* (barber) in his *Atmācharit* as a surgeon and 'specialist' in ear troubles.²⁵

The *Jwara-rog* (fever),²⁶ often mentioned in the contemporary newspapers, perhaps refers to malaria, which killed many not only in Calcutta but also in the remote countryside.²⁷

Quinine and the vaccination against smallpox were then considered to be the two great blessings of Western medical

science. Quinine, the essential principle of cinchona, was isolated in France in 1820. But, according to others, it was first obtained, though in an impure state, by Gomez of Portugal early in the nineteenth century. South America, chiefly Bolivia and Peru, was the original home of cinchona. The fruits of a British 'expedition' under Clements Markham in 1859 to South America formed the basis of the Indian cultivation. Dr. Thomas Anderson, the then Superintendent of the Royal Botanic Garden, Calcutta, was engaged in the cultivation of this exotic species. In 1861 he went to Java to study the method adopted by the Dutch. He returned with many healthy plants. But the first cinchona nurseries were set up at Senchal, 5 miles from Darjeeling. Cinchona bark was available in the market in 1869-70.²⁸ Vaccination against smallpox was then known as *Ingraji-tika*,²⁹ the discoverer being Edward Jenner (*d.* 1823), an English physician. The *Ingraji-tika* was known in Bengal as early as 1819.³⁰

In 1835 Lord Bentinck abolished the medical class (*Baidyak* section) of the Calcutta Sanskrit College³¹ (founded in 1824) as well as that of the Calcutta *Madrasa*, and opened a full-fledged Medical College on the English model in the same year.³² Madhusudan Gupta (*d.* 1856), a student of Kshudiram Visharad in the *Vaidyak* or *Ayurvedic* section of the Sanskrit College, was an Assistant Lecturer of the Calcutta Medical College. October 28, 1836, was the gala day of Madhusudan Gupta's life—a day of sorrow for the die-hards of Hindu bigotry, but a day of decisive triumph for the New Age. On this day, a high caste Hindu of Bengal, nay, of the whole of India—applied his knife to dissect a dead body—an event described by Mr. Bethune, at that time President of the Council of Education, as 'epoch-making'.³³ The contemporary *Sambad Bhaskar*, then edited by Gaurishankar Tarkavagish, paid a high tribute to Madhusudan Gupta's unparalleled moral courage in these words [*in English rendering*]: "The people of this country, particularly the Hindus, far from handling a dead body, would purify the place where even

the dead body of their parents so dear to them is laid,—by washing that place with fresh cow-dung diluted in water (*gomay jaler akhita*); when a corpse is lifted on bier and taken out of the outer gate of the house, they sprinkle the same dilution over the whole way. Madhusudan Gupta, though born in a high caste family, was the first among the Hindus to dissect a dead body after his admission to the Medical College.³⁴ But Dr. Mahendralal Sarkar (b. 1833) considered Rajkrishna Dey as the 'pioneer of dissection' in Bengal and based his conclusion on an eye-witness's account.³⁵ Another brilliant Bengalee medico during the period under review was Dr. Suryakumar Goodeve Chakrabarty (d. 1874), Professor of *Materia Medica* in the Calcutta Medical College.³⁶ It was mainly due to the efforts of Dr. Chakrabarty that a branch of the British Medical Association, England, was set up in Calcutta.³⁷ Though ridiculed for marrying a *Bilati Bibi* (English lady) and embracing Christianity (*Eshu Mantra Diksha*) by the *Sambad Prabhakar*,³⁸ the contemporary Bengalee journal regretted the death of Suryakumar, who was then only 47: "a brilliant star in the firmament has disappeared."³⁹

In 1850, the Medical College had on its rolls 80 Hindu and 9 Muslim students, but only 8 students came out successful that year.⁴⁰ The first M.D. of the Calcutta Medical College was Chandrakumar Dey.⁴¹ But Mahendralal Sarkar, who was the second to obtain the M.D. degree in 1863 from the same College,⁴² was perhaps the most brilliant among his contemporaries in the same field. He is not only remembered as the founder of the Indian Science Association or *Bharatvarshiya Vijnan Sabha* (established in 1876)⁴³—now known as the Indian Association for the Cultivation of Science—but also for his sober opinion regarding the marriageable age for girls. In unambiguous terms he once declared: "For the sake of our sisters and daughters, who are to become mothers, and for the sake of generations yet unborn, but upon whose proper development and healthy growth, the future well-being of the country depends, the earliest marriageable age of our

females should be fixed at a higher point than what obtains in our country. If the old grandmother's discipline could be made to prevail, there would be no harm in fixing that age at 14, or even 12, but as that is well-nigh impossible or perhaps would not be perfectly right and consistent with the progress of the times, *I should fix it at 16.*"⁴⁴

Some of our reformers in the nineteenth century were strongly opposed to the same pattern of education for males and females. Though the subjects taught in the *Ladies' Normal and Adult School*⁴⁵ founded by Keshabchandra Sen (*b.* 1838) on February 1, 1871,⁴⁶ included Physiology,⁴⁷ Keshabchandra did not favour the idea of 'making men of women'. In a meeting of the *Bama Hitaishini Sabha*, established at his instance in May, 1871, Keshabchandra asserted [*in English rendering*]: "As the nature (*prakriti*) of man and woman differs, so any attempt to improve them should be different... Women should be elevated in feminine virtues (*stri jatiya sadgun*). One of these is to learn *sandhi* (not the rule of joining words but to be at ease by compromise with all the members of her own family). If you wish them (women) acquire masculine virtues and aptitudes, it will be no advance, no improvement but only deterioration and retrogression... it is no betterment, if you turn a jackfruit into a mango or *amra* (a sour fruit) into *neem* (bitterly bitter). The destruction of original nature is no improvement (*unnati*)."⁴⁸ But we find women in the nineteenth-century Bengal pushing forward to a place of equality in almost every sphere of life with men, even in the field of Western medical science. Kadambini Bose (*b.* 1861), later Mrs. Ganguli, one of the first two women graduates of the University of Calcutta in 1883,⁴⁹ acquired a great mastery over the science of medicine. She returned to India from the United Kingdom in 1893, after the successful completion of L.R.C.P. (Licentiate of the Royal College of Physicians from Edinburgh) and L.R.C.S. (Licentiate of the Royal College of Surgeons from Glasgow) courses of study. Thus the alleged natural superiority of man proved a ridiculous myth.

As regards the progress made in Surgery, it is on record that as early as 1856, a 'Caesarian section' or operation took place in the Calcutta Medical College, to remove the child from the uterus of the mother, who, bitten by a snake, had earlier expired.⁵⁰

The Homeopathic treatment⁵¹ was not unknown. Rajendranath Datta of Bowbazar (Central Calcutta) was the first among the Bengalees to introduce the Homeopathic system of medicine.⁵² Homeopathic dispensaries were opened in different parts of Bengal by Ishwarchandra Vidyasagar (*b.* 1820), obviously to provide cheap medicine for the poor.⁵³ Amritalal Basu (*b.* 1853) has been referred to in the *Puratan Prasanga* as the first 'Homeopath Surgeon'.⁵⁴ The designation is rather ambiguous. The dictionary meaning of 'surgeon' is: one who treats injuries or disease by manual operations. And it is a known fact that Homeopathic medicine is generally taken orally. However, the most well-known Homeopath of the period was Dr. Beriny.⁵⁵ Dr. Mahendralal Sarkar, one of the most promising practitioners in the Allopathic system of medicine, took to the practice of the much-ridiculed Homeopathy, after having read Dr. Morgan's *Philosophy of Homeopathy* for a review and under the influence of Rajendranath Datta, then popularly known as 'Raja Babu'.⁵⁶ Perhaps Mahendralal rightly felt that the costly Allopathic treatment was not for the general mass of his half-starved countrymen, and moreover, as he himself said, "Homeopathy is a form of treatment that does not require the physician to press the patient's chest with his knee."⁵⁷ In a paper read at one of the meetings of the Bengal Medical Association (a branch of the British Medical Association) on February 16, 1867, he bitterly criticised Allopathy which created an uproar. The European physicians threatened to oust him from the office of the Deputy Chairman of the Association.⁵⁸ But Mahendralal was an indomitable character like Ishwarchandra Vidyasagar. He wrote, "I was sustained by my faith in the ultimate triumph of truth.... Persecution had already commenced. Professional

combination is against me, and is likely to be stronger; every one's arm seems to be raised against me; but I cannot deprive myself of the satisfaction that mine has been, and shall be raised against none. It is probable 'my bread will be affected', but I shall never forget the words of Jesus who certainly speaks as man never spake, that as beings, instinct with reason, and made in the image of our Creator 'we must not live by bread alone', but by every word that proceedeth out of the mouth of God."⁵⁹

Nobody could name Mahendralal Sarkar's religion. He did not believe in God, in Incarnations, in the supernatural and spiritual mysteries.⁶⁰ Such a man was called in when Sri Ramakrishna, the saint of Dakshineshwar, was removed from Dakshineshwar to Shyampukur, sometime in the middle of the year 1885 and later to Cossipore for his treatment of cancer in the throat. One day Mahendralal was found shouting angrily: "To give him *nux vomica*, why I am not dead yet", when he heard that Dr. Pratap Chandra Majumdar had suggested *nux vomica*, a preparation from the seed that yields strychnine (Bengali: *Kuchila phal*), for Sri Ramakrishna suffering from the incurable throat cancer.⁶¹ Somehow the doctor and the patient became interested in each other; the doctor would sit for hours forgetting his other professional calls, and the patient would talk to him about everything except his ailments, each eager to convince the other of the unsoundness of his views. We quote two passages from the *Gospel* (*Sri Sri Ramakrishna Kathamrita*)—passages that pass scrutiny very well.

i. *Master*: As a man's faith increases so does his knowledge of God...the cow that gulps down everything—gives milk in torrents.

Doctor (to the devotees): It is not right, however, to make the cow yield milk by feeding her all sorts of things. One of my cows was fed that way. I drank its milk and the result was that I became seriously ill...I had

to go to Lucknow for a change to get rid of the illness. I spent twelve thousand rupees!⁶²

- ii. Mahima Chakravarty began to describe the *Kundalini* (lit. 'the Serpent Power'—the spiritual energy lying dormant in all individuals). He said: "None can see it. That is what Shiva says."

Doctor: Siva examined man only in his maturity. But the Europeans have examined man in all stages of his life from the embryo to maturity. It is good to know comparative history. From the history of the Santhals one learns that *Kali was a Santhal woman*. She was a valiant fighter. (All laugh).⁶³

Herein breathes the genuine spirit of the Renaissance in Bengal, if it means the Age of Reason, if it means the emancipation of man's mind from the thraldom of the authority of the *sastras* and their commentaries.

Contemporary advertisements of patent medicines throw interesting sidelight on the people's ailments and their cure in the nineteenth century. 'Dr. King's Quinine' was advertised for Malaria in a contemporary monthly journal, the *Calcutta Magazine*, conducted by Owen Aratoon.⁶⁴ As for the "infallible, successful and sure cure for Cholera" one Mrs. Lucas' (of 254-255 Bow Bazar Steet, Calcutta) advertisement came in the same Magazine; also announcing "no surgical operation" (?) (in Cholera perhaps Saline injection is meant) will be performed, but simply "a few drops" of her most valuable medicine (Chlorodine?) will be administered.⁶⁵ The contemporary *Sambad Prabhakar* once advertised in Bengali 'cauldrone' (?) Chlorodine as a cure for Cholera.⁶⁶ Mr. Kiernander, Inspector of Customs, Calcutta, once found 'Darlington's Paincurer' relieving his troublesome coughs.⁶⁷ 'Holloway's Ointment' was considered a certain remedy for "bad legs, bad breasts, and ulcerations of all kinds," and it also proved miraculous in "curing skin diseases, and in arresting and subduing all inflammations."⁶⁸ It is interesting to note that

even kerosene oil—‘American, Devoe’s Imperial Brilliant’—was advertised as a good *medicine* in rheumatic cases.⁶⁸ If I am permitted to quote the evidence of my grandmother (*b.* 1870), my grandfather Rajmoni Qanungo once brought in a small phial of kerosene oil, not for burning but for using it as a cure for rheumatism. On another occasion, a gentleman from the town brought one canister of ‘Elephant Brand White Kerosene’ to his village home, about 8 miles from our village (Qanungopara, Chittagong District, now in Bangladesh). Rumour spread like wild-fire, and people even from distant villages flocked to see this wonderful *Bilati tel* (English Oil) that burns better than mustard oil as well as cures pain and rheumatism. Superstitions and beliefs found in the benighted countryside often give us useful and correct clues to the state of things in the past. And it will take at least half-a-century more to obliterate the impact of the nineteenth century from our society.

NOTES AND REFERENCES

1. Dvijendranath Tagore, *Nabyabanger Utpatti, Sthiti Evar Gati* (first published in the *Tattwabodhin Patrika*, Chaitra, 1807 Saka), reprinted in the *Prabandha-mala* (1327 B. s./June, 1920). Compare Bepin Behari Gupta, *Puratan Prasanga* (first published in two parts, part I, 1320 B. s.; part II, 1330 B. s.), Vidyabharati Edition (Sravan, 1373 B. s.), pp. 281-87, 295-98. Reminiscences of Dvijendranath Tagore.
2. William Adam, *Reports on the State of Education in Bengal, 1835 & 1838*, Calcutta University Edition (1941), edited by Anathnath Basu, pp. 198-99.
3. *Ibid.*, p. 197.
4. Rajnarayan Basu, *Bangla Bhasha O Bangla Sahitya Vishayak Prastab* (1935 Samvat/c. 1877 A.D.), pp. 102-11.
5. *Ibid.*
6. Emile Coué (1857-1926) of France was an exponent of this ‘auto-suggestion’ cure for disease, preaching ‘every day and in every way I am growing better and better’.

7. For *Kabiraj* see *Jnananveshan*, as quoted in the *Samachar Darpan* (November 21, 1835). Also B. B. Gupta, *op. cit.*, p. 174. For *Baidya* see *Samachar Darpan* (August 13, 1891). Also *Jnananveshan*, as quoted by the *Samachar Darpan* (August 10, 1839).
8. Rajnarayan Basu, *Atmacharit* (first published in 1909), Third Edition, 1952 (Orient Book Co.), p. 17. Maharaja Kalikrishna Bahadur of Shovabazar (Central Calcutta) was cured of a malady by Dr. Halliday in three days with a dose of purgative (vide *Samachar Darpan*, May 28, 1831).
9. B. B. Gupta, *op. cit.*, p. 174. Also *Jnananveshan*, as quoted by *Samachar Darpan*, November 21, 1835.
10. Shubnath Shastri, *Atmacharit* (Ashvin, 1359 B.S.), p. 42.
11. Dewan Kartikeyachandra Ray, *Atmajivancharit* (first published in 1303 B.S./c. 1897 A.D.), 1363 B.S. edition; pp. 19, 83.
12. Shubnath Shastri, *op. cit.*, p. 42.
13. *Jnananveshan*, as quoted by *Samachar Darpan*, November 21, 1835.
14. *Chithipatre Samajchitra* (volume II, 1963), edited by Panchanan Mandal, p. 62. Compare Kalipada Biswas, *Bharater Banaushadhi* (1950), part I, published by the University of Calcutta.
15. *Ibid.*, p. 79.
16. *Ibid.*, p. 67.
17. It originated in India (vide: *The Great Encyclopaedia of Universal Knowledge*, Odhams Press, London, p. 255). The Hindu name for the goddess of cholera is a variant of the Mother-goddess Kali, worshipped under the name of *Jwala-kunari*. The Muslims invented a counterpart under the name of *Aola-Bibi*, in consonance with the vernacular name of disease, *Aola-Utha* (the disease of vomiting).
18. Kartikeyachandra Roy, *op. cit.*, p. 20.
19. *Samachar Darpan*, February 24, 1838.
20. A smallpox epidemic of a serious nature once broke out in Calcutta in 1838 (*Samachar Darpan*, April 27, 1839).
21. The Manuscript section of the Visva-Bharati has several MSS. relating to *Shitala*. It is interesting to read that fever (the malady that presages an attack of smallpox) ranks as the *patra* (Prime Minister) of the goddess and the sixty-four kinds of pox (each known by a different name and with definite symptoms) figure as the militant lieutenants. (*Punthi Parichay*: *op. cit.*, III, pp. 254-70.)
22. Rajnarayan Basu, *Atmacharit*, p. 15.
A Sanskrit anthology of well-said verses (*Subhasita Ratnavali*, circa, twelfth century) hits the *Kabiraj* hard. We take the liberty to give two verses in English rendering:
 - i. "Salute thee, O *Kabiraj*, the brother of the god of Death (*Yamaraj*)! The god of Death takes away life only; but thou both life and money" (causing physical as well as an economic death of the heirs of thine victim).
 - ii. "Seeing the funeral pyre ablaze (by the roadside), the *vaidya* (physician) mutters to himself in ~~utter despair~~ Neither have I gone, said my brother

- (to treat this man); whose sleight of hand (*hasta laghavan*) is it (i.e. death) then?"
23. *Samachar Darpan*, May 2, 1835; *Sambad Bhaskar*, May 27, 1851.
 24. *Sambad Bhaskar*, May 27, 1851.
 25. Shibnath Shastri, *Atmacharit*, p. 43. Also see *Puratan Prasanga*, p. 174.
 26. *Samachar Darpan*, May 28, 1831 and June 20, 1835. In Bengal, there are not less than seven kinds of *jwar* (fever), each known by a different name. These are: i. *Kaf-jwar* (catarrhal fever); ii. *Sabiram* or *Bisham jwar* (intermittent fever); iii. *Bata-slaishmik jwar* or *swalpabiram jwar* (remittent fever); iv. *Sannipatik jwar* (typhoid or enteric fever); v. *Dengue-jwar* (also called 'break-bone fever', 'dandy fever', 'three-day fever'); vi. *Shlipad jwar* (filarial fever); *Pita jwar* (yellow-fever or jaundice). Also see *Puratan Prasanga*, p. 209.
 27. *Samachar Darpan*, May 28, 1831 and November 25, 1835. Malaria was known in Bengal as early as 1860. See *Puratan Prasanga*, p. 174.
 28. *Amrita Bazar Patrika*, December 13, 1966.
 29. *Samachar Darpan*, February 11, 1837.
 30. *Samachar Darpan*, April 13, 1819. From February 1837 to February 1838, 3,190 persons were vaccinated in Calcutta (*Samachar Darpan*, February 24, 1838).
 31. *Samachar Darpan*, February 14, 1835.
 32. *Ibid.* Also *Jnananveshan*, as quoted by *Samachar Darpan*, March 26, 1836.
 33. *Sambad Bhaskar*, November 22, 1856. Also see J. Kerr, *Review of Public Instruction in the Bengal Presidency from 1835 to 1851*, II (1853), p. 210.
 34. *Sambad Bhaskar*, November 22, 1856.
 35. *Hundred Years of the University of Calcutta* (1957), published by the University of Calcutta, p. 36.
 36. *Amrita Bazar Patrika*, October 15, 1874.
 37. Shibnath Shastri, *Ramtanu Lahiri O Taikalin Bangasamaj* (first published in 1904), New Age Edition (Bhadra, 1362 B.S.), pp. 260-61.
 38. *Sambad Prabhakar*, February 15, 1848.
 39. *Amrita Bazar Patrika*, October 15, 1874. For 'Goodeve Chakraverty', also see *The Medical Reporter*, June 16, 1874.
 40. Upendranath Mukhopadhyay, *Hindu Jati O Shiksha*, part II, p. 609. The year of publication of this book is not known, but internal evidence shows that it is an old work of considerable worth. I have used an old copy of the book belonging to the Santiniketan Brahmacharya Vidyalaya Library, now preserved in the Visva-Bharati Central Library (*vide*: Catalogue No. 6616).
 41. Shibnath Shastri, *Ramtanu etc.*, p. 260.
 42. *Ibid.*
 43. *Ibid.*, p. 265.
 44. *First Annual Report of the Indian Reform Association*. Compare Prosanto Kumar Sen, II (1954), Appendix II, p. 311.
 45. P. C. Mozumdar, *The Life and Teachings of Keshub Chunder Sen* (1887), Third Edition (1931), p. 367.
 46. *Ibid.*, pp. 154-55, 357.
 47. Shibnath Shastri, *Atmacharit*, Third Edition (1940), p. 193.

48. *Banabodhini Patrika*, May, 1871.
49. *Hundred Years of the University of Calcutta*, p. 122.
50. *Sambad Bhaskar*, September 6, 1856.
51. The founder of Homeopathy Samuel Hahnemann (*d.* 1843), a German physician, 'revised' the whole system of medicine in vogue. By various researches he came to the conclusion that the true principle of the healing art was *similia similibus curantur*, 'like things are cured by like'. This was announced to the medical world in 1796.
52. Chandicharan Bandhyopadhyay, *Vidyasagar* (first published in 1302 B.S./c. 1896 A.D.), Fourth Edition (1320 B.S./c. 1914 A.D.), p. 501.
53. *Ibid.*
54. *Puratan Prasanga*, p. 205.
55. *Ibid.*
56. Shibnath Shastri, *Ramtanu etc.*, p. 261.
57. Swami Nikhilananda, *The Gospel of Sri Ramakrishna* (first published in 1942). Originally recorded in Bengali in five volumes by 'Sree Ma', a disciple of the Master. Complete translation; Fourth Edition (1964), p. 853.
58. Shibnath Shastri, *Ramtanu etc.*, p. 262.
59. *Ibid.* p. 263.
60. *The Gospel of Sri Ramakrishna*, pp. 838, 851.
61. *Ibid.*, p. 920.
62. *Ibid.*, p. 852.
63. *Ibid.*, p. 865.
64. *Calcutta Magazine*, May, 1882.
65. *Ibid.*
66. *Sambad Prabhakar*, December 5, 1840.
67. *Calcutta Magazine*, May, 1882.
68. *Ibid.*
69. *Ibid.*

